James D. Spirek. USS SOUTHFIELD: AN HISTORICAL AND
ARCHAEOLOGICAL INVESTIGATION OF A CONVERTED GUNBOAT. (Under
the direction of Prof. Gordon P. Watts, Jr.) Department of
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This thesis examines, using both historical and
archaeological records, the role of a New York City double-
der steam ferryboat in the American Civil War. During the
crisis year of 1861, Union naval agents searched for
adequate merchant vessels to strengthen the practically non-
existent navy fleet. Ferryboats, particularly those from
New York City, proved to be one type of civilian craft
extremely adaptable for naval purposes. Many were purchased
by the United States Navy to operate in shallow waters as
gun platforms, to assist ground troops, and to provide
logistical support. In order to withstand the rigors of
naval combat, those ferryboats were subject to some form of
modification to enable them to perform their new duties.

An excellent example of the Federal policy was USS
Southfield, a former New York and Staten Island ferryboat
that was converted into a gunboat. The gunboat served in
the Burnside Expedition, the Virginia Peninsula Campaign of
1862, and in the sounds of North Carolina where she was
rammed and sunk on 19 April 1864. By using Southfield as
the case study, this thesis explores the transformation of
the ferryboat into a gunboat to meet her foreseen role in
the war. And later, how varying combat operations and
environmental conditions encountered by the gunboat prompted
additional modifications to render her a more useful weapon.

In addition to consulting extant historical records comprised of naval correspondence, logbooks, newspapers, photographs, and other related materials to research the Southfield's adaptation for naval purposes, an underwater archaeological investigation recorded the sunken gunboat's remains, tentatively identified as the stern. The examination resulted in documenting many of the alterations relating to the ordnance, mooring, and small boat systems of the gunboat. Aside from noting the apparent results of the conversion process, original features of the ferryboat were also detailed. Synthesized with written documents, the recorded remains of the gunboat allow a clearer picture to emerge of the innovative methods by which civilian craft were adapted for military usage during a time of national crisis.
USS SOUTHLAND:
AN HISTORICAL AND ARCHAEOLOGICAL
INVESTIGATION OF A CONVERTED GUNBOAT.

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In Partial Fulfillment
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by

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DEDICATION

To my wife and impending child
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facilitated our stay and secured the necessary logistical support to accomplish our goal—to record Southfield.
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INTRODUCTION

During the American Civil War, Union naval forces were strengthened by the acquisition of large numbers of pre-existing civilian vessels which were quickly converted for use as supply ships, transports, warships, and gunboats. For the most part the products of this large scale conversion effort and their importance to the Union cause have practically disappeared in the historical record, with only periodic references made about their existence. All that survives today to confirm their role in the Civil War are in a few photographs, and in a small number of submerged relics resting in the contested waterways. This thesis attempts to examine, through the existing historical, archaeological, and ichnographic sources, the conversion of one civilian craft from ferryboat into gunboat by focusing on the career of USS Southfield, an ex-Staten Island ferryboat, and how she responded to the rigors imposed upon her by combat.

Research material consulted included naval correspondence, logbooks, newspaper accounts, and photographs concerning the alteration process and results. Supplementing the documents and photographs was an investigation of the remains of USS Southfield, lying in the Roanoke River, to determine the actual details of changing a ferryboat into a gunboat. Equally important in documenting the results of the conversion process was defining the
original attributes of *Southfield*. Thus far plans for the vessel remain undiscovered. Therefore both historical and archaeological investigations associated with *Southfield* yielded previously undiscovered information about the Federal conversion program and New York ferryboat building practices in the late 1850s. Coincidentally, the remains of another ferryboat constructed by the same shipbuilder as *Southfield* rests in the mudbanks of the Northeast Cape River in Wilmington, North Carolina. Investigation of that vessel provided an opportunity to study similarities in construction between the two ships.

In addition to using the historical and archaeological information gathered for the thesis about USS *Southfield*, the materials also proved beneficial to the Underwater Archaeology Branch of the North Carolina Division of Archives and History (UAB). That agency is currently developing a National Historic Landmark proposal designating northeastern North Carolina wrecks as a special historical zone. At the invitation of the UAB, East Carolina University’s Program in Maritime History and Underwater Research (PMHUR) conducted their 1991 summer field school on *Southfield*’s remains to provide a map of the extant wreckage. Important logistical support was generously provided by the town of Plymouth, local organizations, and citizens of Plymouth, including Weyerhaeuser Corporation.

The first chapter of this thesis describes the
preliminary steps undertaken by the Navy Department to increase the number of vessels in the fleet, and then focuses on the eventual purchasing and outfitting of New York City ferryboats for conversion into transports and gunboats. The following chapter examines the origin and development of the New York City double-ender steam ferryboat, with an emphasis on the characteristics of ferryboats from the 1850s to the 1860s. Chapter three outlines the early years of Southfield’s service on the Staten Island route and her subsequent purchase by the U.S. Navy. The chapter also chronicles Southfield’s conversion from a ferryboat to a gunboat, and analyzes the subsequent modifications made to the gunboat to increase her combat effectiveness. Chapter four relates Southfield’s post-sinking history, starting with the immediate attempts made by the Confederacy to retrieve the guns and to refloat the gunboat. The chapter ends with the gunboat’s subsequent discovery in 1990 by Tidewater Atlantic Research, a private underwater archaeological contract firm. Chapter five documents the underwater archaeological fieldwork conducted on the remains of the gunboat. Information gathered from the site is presented along with a short discussion of the observed alterations made to the gunboat. This thesis concludes with a general review of the historical and archaeological aspects of the Federal policy of using ferryboats as gunboats and its manifestation in the case of
Southfield. Appendix A provides a chronological timeline of the gunboat from her purchase in December 1861 until her demise in April 1864, while Appendix B contains plates depicting several of the artifacts retrieved from the site.
CHAPTER 1

AN UNSCHEDULED ROUTE CHANGE

Expanding Union military objectives during the first year of the American Civil War caused the United States Navy to shed its passive posture and adopt a more aggressive and strategic presence along the Atlantic Coast. Initial naval activity along that coastline consisted of blockading southern ports with a makeshift assortment of recently purchased slow deep-draft merchant steamers, sailing vessels, and regular navy warships with similar operational characteristics.¹ When an evolving Federal strategy required the navy to invade Confederate controlled waters, the traditional fleet proved unequal to the task. Immobility combined with deep drafts paralyzed efforts to enter shallow coastal waters. At the start of those inshore operations, naval purchasing agents focused on acquiring shallow-draft merchant craft, especially ferryboats, capable of shallow-water operations.

Shortly after President Abraham Lincoln’s blockade proclamation on 19 April 1861, naval and political leaders expressed concerns about the lack of ships necessary to undertake a blockade of southern ports. Lincoln had stated in his address, "For this purpose, a competent force will be posted to prevent entrance and exit of vessels."² The "competent force" at this time consisted of sixty-nine warships, including thirty-five sail and thirty-four steam-
powered vessels. Of those sixty-nine vessels, only twelve were deployed in home waters at the start of hostilities, and the rest either at distant stations, in repair, or in ordinary. The few ships in operation were expected to patrol more than 3,500 miles of Confederate coastline, from the Rio Grande River to the Virginia side of the Potomac River—an area containing over 180 harbors and navigable waterways.\(^3\) To expand the fleet's ability to maintain the blockade, Secretary of the Navy Gideon Welles recommended the acquisition of merchant vessels to reinforce the inadequate navy fleet.\(^4\)

The decision to rely on civilian craft for military purposes was not a novel solution to the United States' dilemma. Historically, nations involved in conflicts with a maritime component have often resorted to an existing merchant marine fleet to strengthen their meager navies.\(^5\) Early American precedent, moreover, gave Welles a solid footing from which to base his decision to utilize merchant vessels in a time of crisis. For instance, during the Revolutionary War, the Continental Congress had outfitted several Philadelphia merchant ships to bolster its naval forces.\(^6\) Unlike the revolutionary navy, however, the Federal navy did not have to contend with an existing naval power. Before the war's outbreak, the seceding Confederate States had no naval vessels, and only a small number of merchant vessels, to defend their home waters.\(^7\) This
deficiency of specially designed warships on the part of the Confederacy allowed the United States the luxury of gathering diverse classes of merchant vessels and converting them to warships by which to strengthen their fleet.⁸

Immediately following the shelling of Fort Sumter on 12 April 1861, the Navy Department began buying merchant vessels and contracting for the construction of warships. Commandants of the Boston, Brooklyn, and Philadelphia Navy Yards were ordered to purchase or charter, and then arm, equip, and man merchant steamers capable of being converted to warships.⁹ The three navy yards, which had previously served a small number of vessels, strained under the pressure of converting, outfitting, and arming the many new arrivals to the fleet. Brooklyn naval storekeeper Anson Henick, commenting on the urgency to build a blockade force, noted that more vessels had been outfitted in three months than in the same number of years at the yard.¹⁰

The turbulent circumstances created by the outbreak of war had required Welles and the Navy Department to react quickly to the crisis without Congressional consent. On 4 July 1861, with Congress in session, Welles reported the purchase of twelve steamers, three sailing vessels, and the charter of nine steamers for blockade duty. The twelve purchased steamers were variously outfitted with three to nine guns each. Those additions increased the fleet, on paper, from sixty-nine to eighty-two warships.¹¹ Welles
also warned Congress that insufficient funds threatened to hinder the pace of acquiring and outfitting vessels for naval service. To avoid the impending monetary crisis, Congress quickly passed an act providing additional funds to continue the procurement, and conversion of merchant vessels. Lincoln signed the bill into law on 25 July.\textsuperscript{12} The act provided $3 million for the navy to:

\begin{quote}
... hire, purchase, or contract for such vessels...[and] authorized to furnish any vessel or vessels which may be purchased or contracted for, with such ordnance, ordnance stores, and munitions of war, as may be necessary to enable such vessel or vessels to render the most efficient service...\textsuperscript{13}
\end{quote}

With recently appropriated funds, the Navy Department instructed its agents and officers to continue selecting and purchasing merchant vessels. Each navy yard had created an ad hoc review board made up of a naval constructor, an ordnance officer, and an engineering officer entrusted with the duty of determining the usefulness of a merchant vessel for possible naval service.\textsuperscript{14} When a ship met the board's criteria, the navy agent negotiated a price with the seller or charterer. In this manner, the agent at the Brooklyn Navy Yard continually disbursed funds to lease or purchase schooners and steamers during the ceaseless frenzy to bolster fleet strength that continued throughout 1861.\textsuperscript{15}

At first chartering of vessels appeared the most logical, economical, and obvious policy because most northern political and military leaders believed the
conflict would last only six months. Leases, therefore, were mostly of short duration. An additional benefit of this approach allowed the navy to drop the lease if the ship performed poorly.\textsuperscript{16}

The second option, purchasing commercial vessels, resulted in several sound and sensible investments for the navy. The majority of the hastily purchased vessels, however, proved costly and less than satisfactory acquisitions. All too often officers inexperienced in appraising civilian craft approved the procurement of expensive and decrepit vessels unsuited for their intended use. Another prevalent problem centered on unscrupulous shipowners who realized the government's intent to obtain a vessel at almost any cost. Profiteers, eschewing patriotic sacrifice, eagerly took advantage of the situation to sell ships and boats of dubious quality for personal gains.\textsuperscript{17}

Frustrated by the growing number of defective vessels entering the fleet and their exorbitant costs, Welles wisely sought a means to rectify problems associated with the procedure for obtaining merchant vessels.

In mid-1861, to suppress the flow of inadequate vessels into the naval arsenal, Welles appointed a civilian, George D. Morgan, to act as the naval purchaser of merchant vessels in New York City and other eastern port cities.\textsuperscript{18}

In compliance with departmental orders, and working in conjunction with the naval review board and other civilians,
Morgan initially sought merchant steamships of moderate size and draft. Later in the year, he directed his attention towards sailing vessels, steam tugs, and ferryboats. Acting in the capacity of naval purchaser until late 1861, Morgan inspected countless vessels in New York and other eastern seaports. During his six month tenure Morgan purchased more than sixty vessels of various types and tonnages, including schooners, tugs, ferryboats, and other steamers, totaling $3,500,000. In all, during the first nine months of the war, the Navy Department purchased 136 vessels, and by the end of 1864 it had purchased 418 merchantmen, 313 of which were steamers. Overall, Congress allocated $19 million during the war for the navy to build a "competent force."

Although the quickest and most expedient method of creating a fleet was to purchase existing craft, the Navy Department also realized the need to construct warships. Welles strongly felt that merchant vessels could not withstand rigorous blockade duties. He therefore ordered the construction of twenty-three gunboats of 500 tons each with year-round capabilities. Gaining the nickname "90-Day Gunboats," due to the rapidity with which the first several were built, all twenty-three eventually joined the Union fleet. Additionally, the Department ordered the building of several classes of large and fast gunboats, in addition
to ironclads. In all, the Federal government constructed 208 warships to suppress the rebellion.

Later events proved Welles correct in his assumptions about merchant vessels lacking the stamina to perform strenuous naval tasks. Despite inspections by the review boards, urgency dictated in the entry of merchant vessels with leaky and old boilers, unsound hulls, and poor engines into the fleet. Furthermore, in order to convert and outfit the merchant vessels rapidly for naval service, many deficiencies remained uncorrected.

Failure to remedy pre-existing problems eventually prevented many vessels from effectively participating in the blockade. According to one study of the North Atlantic Blockade Squadron, over the course of the war an average of sixteen percent of the squadron, or seventy-one warships per year, were under repair and away from their stations. In addition to the above figure, many vessels remained on station while undergoing repairs, which seriously hindered their mobility and combat ability. Another serious problem developed when military officials wanted to pursue inshore combat. This type of warfare required shallow-draft warships, a scarce commodity in an Federal fleet geared towards coastal or deepwater operations.

From the time of the Revolutionary War, a shortage of shallow-draft vessels had persisted in an American navy oriented toward deepwater activities. One contemporary
author complained that "... our government does not devote attention to building war vessels of light draft ... provided with a few heavy guns." He further argued that a vessel "... with a draft of 6 feet, could penetrate our inland waters and bid defiance to all our present naval vessels ... ." The Union navy found the Confederate sounds, bays, and rivers inaccessible due to the lack of shallow draft warships. Sand bars, winding rivers, narrow channels, and shallow depths, among other difficulties associated with interior waterways, thwarted the Union's deep-drafted vessels. Once armed with shallow-draft vessels, however, Federal forces were able to enforce a more efficient blockade by closing vulnerable Confederate inland port cities along the Atlantic coastline.

The Union navy's shift from concentrating on an offshore blockade to more aggressive and offensive inshore operations occurred shortly after the assault on North Carolina's Hatteras Inlet. In late August 1861, a large flotilla of combined navy and army units under the command of General George Butler and Flag Officer Silas H. Stringham attacked Confederate forts Hatteras and Clark, guarding Hatteras Inlet. After Confederate defenders capitulated on 29 August, the Union expedition sailed south to secure nearby Ocracoke Inlet. The expedition's primary objective called for sinking hulks in the two inlets to bar them from potential Confederate use. Welles and the Blockade
Strategy Board had earlier agreed that this measure offered the most convenient and quickest method of denying the inlets to Confederate privateers and blockade runners. 34 Stringham and Butler, however, felt differently about the short-sighted plan after the successful outcome of the Union expedition.

Stringham and Butler urged Welles, Lincoln, and the rest of his cabinet to reconsider the decision to close the inlets. According to the two, a far superior and more strategic alternative to blocking the inlets from Confederate use, as well as northern, was to keep them open as invaluable avenues by which to strike into the sounds of North Carolina. Although the plan gained acceptance by military and political decision makers, the Union navy could not immediately muster enough warships of suitable draft to enter the Pamlico or Albemarle sounds. 35 This had been made quite clear at Hatteras Inlet where only one of the expedition's vessels, the steam tug USS Fanny, had proved capable of negotiating the channel into Pamlico Sound. 36 Ordered to begin assembling strike forces into southern interior waterways, the Navy Department quickly requested that the naval purchasers consider shallow draft as the most important criterion in choosing a merchant vessel. To fulfill the requirements of shallow-water combat operations, and naval duties in general, navy purchasers sought tugs,
riverboats, ferryboats, and other steamers of light draft appropriate for the tasks.\textsuperscript{37}

One of the unique, but ideal selections made for the fleet of shallow-water craft was the double-ended steam ferryboat. Although many ferryboats were purchased in several eastern port cities, the majority were acquired from ferry lines operating in New York City. New York City ferryboats proved especially attractive to naval purchasers for several reasons, most notably their heavily constructed decks, strong hulls, powerful engines, shallow draft, expansive cabins, and overall large size. Many purchasers believed those qualities would allow ferryboats to accommodate stores, ordnance, ammunition, and crew easily for use as either transports or gunboats.\textsuperscript{38} Several individuals in charge of acquiring vessels in mid- to late 1861, however, held contrary opinions about ferryboats. Their differences centered over the desired role in the war and need, if any, for those kind of boats.

In mid-June 1861, Morgan, the chief proponent for including ferryboats in the navy arsenal, inspected three New York City ferryboats. He proposed that the 400- to 500-ton double-ender ferryboats be used as gunboats in the Potomac River and expected they would prove more useful than small steamers. The two ferryboats had heavy scantlings and strong deck frames which could bear the weight of heavy shell guns needed to challenge Confederate shore batteries
effectively. Moreover, with boilers and engines below the waterline, vital machinery was protected from disabling cannon fire. Morgan believed that the draft of the ferryboats, when fully loaded with ordnance and provisions, would not exceed six feet, thereby facilitating river navigation.39

Morgan also suggested the guards, or sponsons, at the forward end of the ferryboats be removed, while retaining the original shape of the after end.40 This measure would still allow for a large amount of midships and aft deck space to work the guns. Modified in this manner, and with no additional work on the hull or engine, a ferryboat could be readied in a short amount of time. Morgan noted that such armed ferryboats, "... could be made the most formidable Gun Boats that we have on the Southern Coast or Rivers."41 Morgan’s suggestions apparently fell on deaf ears for none of the ferryboats were purchased.

The Navy Department may have delayed its decision about the use of ferryboats as gunboats due to the objections of naval constructor Samuel M. Pook. Pook believed that steam tugs could be converted into far more effective river gunboats at a cheaper price than ferryboats. Additionally, tugs could accommodate more armament and steam faster than ferryboats. If the navy decided to purchase ferryboats despite his objections, Pook thought, they should
remain unarmed and used in their past civilian capacity as transports.\textsuperscript{42} The conflicting opinions expressed by Morgan and Pook may have prevented the Navy Department from reaching a quick decision about the need for and later use of ferryboats. Despite relaying his opinions in mid-June, Morgan had yet to receive an answer from the Department to resolve the issue by late July. Following a second letter, Morgan finally gained permission from Gustavus V. Fox, Assistant Secretary of the Navy, to purchase five ferryboats. Despite the purchase order, Morgan for some unexplained reason did not buy any of the five ferryboats. In middle of August he again urged the navy to purchase ferryboats and reiterated the brief conversion process as an attractive enough reason to obtain them.\textsuperscript{43}

Although the navy had not yet completed the outright purchase of any New York City ferryboats by mid-August, a private New York City shipbuilder, Charles W. Copeland, had acquired two ferryboats ultimately destined for naval use in July. Probably working under a navy contract, Copeland intended to alter the ferryboats Ellen and Whitehall to naval specifications, leaving the tasks of outfitting and arming to the navy. He believed the alterations necessary to transform the ferryboats into gunboats would require only three weeks to complete.\textsuperscript{44}
General alterations conceived by Copeland, under naval guidance, specified the building of a five-and-a-half-foot tall bulwark around the open ends of the ferryboats to afford the gun crew protection from musket fire. He also proposed facing the bulwarks with sheets of boiler iron as an extra measure of protection. Three to five gun ports fitted with shutters at either end of the vessel would allow cannon access through the bulwark. Each gun port also would have the attendant ring bolts, breeching bolts, and other hardware necessary for securing the guns. To strengthen the ferryboat for the added weight of the guns, each end of the main deck was to be sheathed with wood and the guards, or sponsons, were to be reinforced with additional outriggers.45

Proposed changes to the superstructure included dropping the promenade deck to seven or eight feet above the main deck. The main deck cabins, originally the men’s and women’s cabins, would house the galley, water closets, and other miscellaneous rooms. Alterations to the hold would provide accommodations for the officers and crew, chain lockers, magazines, coal bunkers, and other store rooms. A protective measure to the machinery would consist of wrapping a boiler-iron jacket around the steam drum. Any problems with the machinery would be repaired. Supplementary modifications would include the addition of bitts, boat davits and cranes for two launches, extra
pintles and gudgeons for rudders, and an auxiliary tiller with the proper tackles to allow the pilot to steer from the main deck.\textsuperscript{46}

On 21 August 1861, naval officers from the Brooklyn Navy Yard delineated the design of store rooms, accommodations, ports, and supplied other pertinent details of the \textit{Ellen} and \textit{Whitehall} so Copeland could begin altering the vessels. Concerning the bulwarks, Copeland and a naval constructor agreed on the need to face them with boiler iron. The naval constructor suggested constructing the bulwarks with two-inch thick boards covered with boiler iron fastened to stanchions.\textsuperscript{47}

Copeland’s conversion of the ferryboats must have met navy standards, because the converted gunboats were purchased on 10 October 1861, for duty with the South Atlantic Blockading Squadron.\textsuperscript{48} However, not all ferryboats destined for the war would be converted to gunboats, others would also be used in an auxiliary role as transports.

In early September, Flag Officer Samuel Francis Du Pont, newly appointed commander of the South Atlantic Blockading Squadron, expressed his own ideas regarding ferryboats’ utility to the Union cause. Preparing for the upcoming Federal expedition to Port Royal, South Carolina, Du Pont with Pook, and chief engineer James B. Kimball inspected several ferryboats for possible use in the
expedition. They discovered that not all New York City ferryboats were potential candidates for the hardships of naval usage. One of the ferryboats examined possessed several deficiencies. Light timbers made the vessel incapable of carrying heavy artillery, and the lack of cabin space failed to provide the anticipated accommodations for crew and cooking facilities. Du Pont, however, remained favorably inclined toward New York City ferryboats for use in his expedition, as long as they did not have those faults.

Using the recently purchased 226-ton ferry Stepping Stones for use in the Potomac River as a gauge, Du Pont wanted one of larger tonnage. Du Pont believed sturdier and larger ferryboats would better serve the Union expedition as platforms for disembarking troops, rather than as armed gunboats. As troop carriers, no extensive alterations to the boats would be necessary except to supply each with a gang plank and breechings to hold it enabling them to join the fleet without a costly and time consuming conversion procedure.

On 2 October 1861, after a brief inspection tour by Morgan, Pook, and Kimball, and after meeting Du Pont's approval, Ethan Allen and Commodore Perry, were purchased for the upcoming Port Royal expedition (Figures 1.1 and 1.2). Doubling that of Stepping Stones, each of the ferryboats' tonnage of 512 tons easily met Du Pont's primary
FIGURE 1.1. FERRYBOAT COMMODORE PERRY.
(Courtesy New York Historical Society)
FIGURE 1.2. GUNBOAT COMMODORE PERRY.
(Courtesy of NYHS)
requirement. After a brief overhaul in William H. Webb's shipyard, the two ferryboats steamed south from New York City to Fort Monroe to join the fleet and receive their armament. At Hampton Roads, Du Pont held maneuvers in order to discover any problems associated with the use of those particular vessels as military rather than civilian transports. He found no such problems, and both Commodore Perry and Commodore Barney, the ex-Ethan Allen, proceeded with the expeditionary fleet to South Carolina.

During the voyage a severe storm caused the two ferryboats to abandon the fleet in order to seek shelter, thus preventing them from participating in the successful Union assault on Port Royal. Du Pont believed the ferryboats' poor seagoing performance was likely a result of the supplies which, among other factors, caused the boats to become heavier and less wieldy. He based this observation on their earlier successful voyage from New York to Hampton Roads in rough weather accomplished without the additional weight of provisions and other materials. When North Atlantic Blockading Squadron Flag Officer Louis M. Goldsborough heard of the two ferryboat's troubles in rough seas, he commented:

Ferryboats, I fear are not likely to get along well on our coast, either at this or any other season of the year. They suffer severely from the seas even when comparatively moderate in force.
Although skeptical of their seaworthiness, Goldsborough would later welcome ferryboats to the naval contingent for the upcoming Burnside Expedition to the sounds of North Carolina in early 1862.

While the two Commodores were undergoing repairs at Baltimore, an ongoing search was in progress to locate other appropriate ferryboats in New York City. By late October there was a new Navy Department requirement for larger ferryboat tonnage resulting from the two ferryboats’ uncompleted voyage to South Carolina. This requisite was based on the premise that larger ferryboats would prove more capable of withstanding the punishing Atlantic Ocean. At the same time the Navy Department decided in favor of Copeland’s and Morgan’s earlier suggestions of using the ferryboats, not as large transports, but rather as armed vessels. One of the first purchases of this new policy was the 750-ton John P. Jackson of the Jersey City Ferry Company.55

Continuing the search for larger ferryboats in early November, Morgan conducted talks with Cornelius "Commodore" Vanderbilt, owner of the New York and Staten Island Ferry Company, about purchasing some of his ferryboats. Vanderbilt thought highly of steam ferryboats in general and believed they could benefit the Federal cause. Morgan, after reviewing the fleet, expressed an interest in the recently constructed 1,100-ton Westfield. Westfield, in
excellent condition, had great power and was the best boat of the ferry line. Attributes of Westfield included an iron strapped hull, a coppered bottom, a draft of five feet, and the potential to carry 4,000 troops. Naval inspectors believed it would make a good sea boat and could withstand arduous sea duty. After two days of negotiations, Morgan purchased Westfield.59

A second inspection of the Vanderbilt ferry line prompted Morgan to examine and purchase Clifton, another recently built ferryboat.60 Morgan also noticed two other large ferryboats of the line's, Hunchback and Southfield, which he would eventually purchase for the upcoming Burnside expedition.

In all, twenty New York City ferryboats joined the Federal navy during the rapid expansion to subdue the civil strife.61 Whether purchased for use as gunboats or transports, ferryboats proved especially adaptable from their previous commercial activities to their new role as military craft. The New York City double-ended steam ferryboats called for duty in the early 1860s were ingeniously modified by using those design characteristics, which had been developing since their conception in 1812.
ENDNOTES CHAPTER 1


2A.A. Hoehling, Damn the Torpedoes! Naval Incidents of the Civil War (Winston-Salem, North Carolina: John F. Blair, Publisher, 1989), 2.


4West, Mr. Lincoln's Navy, 47.

5Johnson, "Investment," 47.


7Johnson, "Investment," 47.


9Report of Secretary of the Navy, 4 July 1861.

10Henick to Welles, 12 July 1861, Letters Received by Secretary of the Navy from Navy Agents and Storekeepers 1843-1865, National Archives Microfilms, Microcopy No. M-528, Roll 10, Record Group 45-Office of Naval Records and Library, National Archives, Washington, D.C.

11Report of Secretary of the Navy, 4 July 1861.


13George P. Sanders, ed., United States Statutes at Large, 36th-37th Congress, 1859-1863; session 1 12 (Boston: Little, Brown and Company, 1863), 272; Lenthal to Welles, 29 November 1861, Letters Received by Secretary of Navy from
Chiefs of Navy Bureaus 1842-1885, MC-518, Roll 16, RG 45, NA.


15Henderson to Welles, 14 June 1861, Letters Received by Secretary of Navy from Navy Agents and Storekeepers 1813-1865, MC-528, Roll 10, RG 45, NA.

16Robert Browning, "From Cape Charles to Cape Fear: The North Atlantic Blockading Squadron During the Civil War" (Ph. D. diss., University of Alabama, 1988), 352, hereafter cited as NABS.

17Browning, "NABS," 352-3.


21West, "Purchases," 76.

22West, Mr. Lincoln's Navy, 52; Browning, "NABS," 356.


25Fowler, Under Two Flags, 53.

26Report of the Secretary of Navy, 4 July 1861.

27Lossing, Illustrated History of the Civil War, 422.


29Ibid., 354-6.
Scientific American XIL, no. 32 (April 18, 1857): 162.


Browning, "NABS," 16-7; Fowler, Under Two Flags, 55.

Fowler, Under Two Flags, 64.

Sheir, "Hatteras Inlet," 22.

Hoehling, Damn the Torpodoes, 28.


George D. Morgan to Gustavus Vasa Fox, 20 June 1861, Gustavus Vasa Fox Papers, Naval Historical Society Collection, Manuscripts Department, New York Historical Society, New York, New York.

Morgan's suggestion seems odd from the point of view that the reason the ferryboat's were extremely useful was because of their double-ended deck for added gunspace while the interior would contain the living quarters. Perhaps, Morgan believed the ferryboat's bow should resemble a riverboat's bow?

Those ferryboats, based on the dimensions given by Morgan, apparently were not purchased at any time by the Navy. Morgan to Fox, 20 June 1861, Fox Papers, NYHS.

Morgan to Fox, 30 July, 31 July, 2 August, 16 August 1861, Fox Papers, NYHS.

Ibid.

Charles W. Copeland to Fox, 16 July 1861, Fox Papers, NYHS; also quoted in Minick, "Part 1," 429.

Ibid., 429.
Ibid., 429.

7Charles W. Copeland to Fox, 22 August 1861, NYHS; verbatim in Minick, "Part 1," 428; Armament on board the Ellen and the Whitehall in 1864 was listed as two 32-pounders and two 30-pounder rifles. Paul H. Silverstone, Warships of the Civil War Navies (Annapolis, Maryland: Naval Institute Press, 1989), 100-102.

8Silverstone, Warships of the Civil War Navies, 100-2.

9The new ferryboat may have been built for a line further up the East River, possibly a Williamsburg ferry or for another company. Morgan to Fox, 9 September 1861, Fox Papers, NYHS.

50DuPont to Fox, 24 September 1861, Confidential Correspondence of Gustavus Vasa Fox Assistant Secretary of the Navy, 1861-65 vol. 1, Robert Means Thompson and Richard Wainwright, eds. (Freeport, New York: Books For Libraries Press, 1920; Reprint 1972), 52-4.

51Morgan to Fox, 24 September 1861, Box 128 AY-Purchase of Merchants-USN, 1861-65, RG 45, NA; Silverstone, Warships of the Civil War Navies, 102.

52Commodore Perry would eventually be re-outfitted as a gunboat for use in the Burnside Expedition.

53The Ethan Allan after its purchase was renamed the Commodore Barney. Silverstone, Warships of the Civil War, 99; Morgan to Fox, 27 September, 30 September, 5 October 1861, Box 128 AY-Purchase of Merchants-USN, 1861-65, RG 45, NA.

54Morgan to Fox, 7 October 1861, Fox Papers, NYHS.

55Du Pont to Fox, 25 October 1861, Confidential Correspondence of Gustavus V. Fox, Thompson, ed., 59-60.


57Hoehling, Damn the Torpedoes!, 28.

58Morgan to Fox, 25 October, 30 October 1861, Box 128 AY-Purchase of Merchants-USN, 1861-65, RG 45, NA; The John P. Jackson was purchased for the Western Gulf Blockading squadron. Silverstone, Warships of the Civil War, 101.
During its passage south, the ferryboat suffered extensive damage consisting of a shattered forward rudder post, steering chocks for tiller ropes and forward deck frame swept away, and deck caulkings washed out due to wave action. To repair the structural damage to the frame, knees were added to secure the deck to hull, among other necessary repairs. Thus the premise that large ferryboats would make better ocean voyagers was flawed. Woodward to Welles, 25 February 1862, Letters Received to Secretary of the Navy, MC-89, RG 45, NA.

59Morgan to Fox, 7 November 1861; Morgan to Welles, 9 November 1861, Box 128 AY-Purchase of Merchants-USN, 1861-65, RG 45, NA.

60Morgan to Fox, 7 November, 16 November 1861, Fox Papers, NYHS; The Clifton was purchased on 2 December 1861 and served in the West Gulf Blockading Squadron during the Civil War along with the Westfield. Silverstone, Warships of the Civil War, 99-102.

CHAPTER 2

DEVELOPMENT OF NEW YORK CITY
DOUBLE-ENDER FERRYBOATS: 1812-1860s

Regular transportation to connect the various points of destination in the York City environs would not occur until the advent of the steam ferryboat. In the days before steam, sloops, periaugers, and row boats handled this traffic in an irregular and undependable fashion. ¹ Shortly after the successful use of Robert Fulton’s steamboat Clermont on New York waters, the benefits of harnessing steam power for the routine task of ferrying passengers were realized. ² The steam ferryboat permitted reliable scheduling of commuting, traveling, business, recreation, and others activities until then highly dependant upon water and weather conditions. Steam ferry service rapidly became a daily and expected feature of New York City life in the 1800s. Their original design and characteristics were developed under the guidance of two famous steamboat pioneers, Robert Fulton and John Stevens, who along with later builders designed their double-ender ferryboats to overcome perennial environmental obstacles, as well as changing demographical influences, in the New York City area.

Robert Fulton accomplished the first sustained use of the double-ender steam ferryboat on 12 July 1812, when he launched the twin-hulled Jersey of 118 tons. Built by the
Charles Brown Yard in New York City, the 80-foot long and 30-foot wide ferryboat transported passengers regularly over the Hudson River. Heavily constructed, the twin hulls of the ferryboat were braced to withstand vibration of the machinery and potential ice floe damage during the winter months. Fulton designed the twin-hulled vessel with a moderate draft to ensure a swift passage over the Hudson and with, "... a great breadth of beam ... to prevent the boat rolling in the trough of the sea [river]." Additionally, a shallow draft of five feet allowed the ferryboat to maneuver easily over the water.

A platform between the two hulls accommodated the machinery as well as passengers and wagons. Two passageways around the machinery allowed travelers to move freely to either end of the boat. To insure unimpeded operation during the winter months, Fulton placed the paddlewheel in the area between the hulls to avoid direct contact with floating ice. He also situated the rudders in the same space, one forward and one aft of the paddlewheel, as he explained:

It was my intention to put a rudder on the bow of each boat, ... but considering that such rudders while acting as a bow, would be injured by ice or destroyed by shocks against a wharf or timbers ... .

Equipped with fore and aft rudders and double-ended hulls, the ferryboat never had to turn about, but simply went forward and backward across the river.
A later Fulton ferry, *Nassau*, also built by the Charles Brown Yard in 1814, retained the twin-hull arrangement. Slightly improved over *Jersey*, *Nassau* was outfitted with a passenger cabin on the main deck. Most passengers, however, found the cabin incommodious and opted to remain on the open deck. *Jersey* and *Nassau* remained the only two ferryboats operated by Fulton until his death. After Fulton's death, another twin-hulled ferryboat, *William Cutting*, was added to the fleet by his former associates in 1827.

After a trip to the United States in the early 1820s, Jean Baptiste Marestier, a Frenchman, wrote a first-hand account of the Fulton-type New York City ferryboat. Marestier described the New York City ferryboats as having a platform between seventy-two and seventy-nine foot in length and a thirty foot width resting on two hulls. The engines were located in the center of the platform. In front of the engine was a twelve-foot diameter paddlewheel fitted with eight buckets eight feet in length and two feet in height. Boiler dimensions averaged eighteen feet long, seven feet wide, and seven feet high. Two cabins were usually located at each end of the platform, the larger for public use, while the smaller one dispensed refreshments. Marestier also noted the twin-hulled ferryboat as the principal design of all American steam ferryboats he observed during his visit.
The Fulton twin-hull double-ender ferryboat, however, did not signal the climax of hull evolution in New York City ferryboats. In 1833, the Union Ferry Company, an outgrowth of the original Fulton ferry line interest, finally dispensed with its twin-hulled ferryboats. Citing the tendency for ice to choke between the hulls and disrupt the paddlewheel’s motion, the company opted for the single-hull design, which easily sliced through ice.\(^9\) Only two important remnants of the Fulton design survived into general practice among later New York City ferryboats: the characteristic double-end, and the sloping main deck from amidships to each end caused by the paddlewheel shaft’s placement above the sheerstrake of the hull.\(^{10}\)

The man most responsible for the prototype of the single-hull New York City ferryboat was John Stevens. On 1 May 1822, Stevens launched Hoboken, a ninety-eight foot steam powered double-ender to run between Hoboken and Manhattan on the Hudson River.\(^{11}\) The ferryboat was designed with a single hull and a sidewheel on either side. To protect the sidewheels, Stevens extended the main deck around them. Consequently and conveniently, the paddlewheel guards, or sponsons, gave additional room and load capacity to the ferryboat. The vessel was particularly adapted to navigating the calm and sheltered interior waters of New York Harbor, and not intended for oceanic voyages.\(^{12}\)

A year later Stevens designed Pioneer, which featured
two cabins, one for men and the other for women, reflecting the customs of the Victorian age. Cabins situated below decks allowed easy movement of passengers and wagons on the main deck. Once those first double-ended ferryboats demonstrated their reliability in New York City, more and more routes were opened to handle the daily traffic loads. Because of that demand more and larger ferryboats were built.

The growth of the surrounding areas of New Jersey, Staten Island, and Brooklyn, and increased economic ties with New York City stimulated the demand for larger ferries and more of them. In the early 1800s New York City’s population numbered around 100,000, with only a few steam ferryboats in operation. By 1824, the city’s population had increased to 200,000 with about six ferryboats to meet the needs of commuters. The increase of population of 1,176,000 subsidized more than 70 ferries in 1860. Some ferryboat companies carried as many as 5,000 passengers a day during this period, and others more, which required commodious boats to handle the traffic.

In the late 1820s and continuing through the 1830s, overall ferryboat sizes increased to accommodate the influx of passengers and wagons on the more heavily trafficked city routes. Stevens’s ferryboat line built the 149 feet long, 16 feet wide, 6 feet deep, and 161 ton Fairy Queen in 1826 and operated it until 1855. Machinery consisted of a
vertical beam engine with a walking beam and two paddlewheels. This particular ferryboat had cabins in the hull, which comfortably accommodated one hundred passengers, while six to eight wagon teams congregated on the open deck. There also was a bar on board, and during the summer, an awning was stretched from end to end. Steering was accomplished by a helmsman, operating one of the rudders by a tiller. The helmsman was guided by the pilot, who stood at the forward end of the vessel and passed instructions back.\textsuperscript{16}

The Union Ferry Company in 1836 ordered three new ferryboats of various lengths to operate on different routes. On more traveled passageways, the company added the 304-ton and 155 feet long Brooklyn, while the New York of the same tonnage was slightly shorter with a 151 foot length, 23 foot beam, and 9 foot depth. Even smaller was the 159-ton Olive Branch of 89 feet in length, 23 feet in beam, and 8 feet in depth. This particular ferryboat most likely operated on a lightly traveled route due to her small size. The ferryboat was powered by a single cylinder vertical beam engine, as presumably were the other two. In addition to those three, the line also operated three other ferryboats ranging in size from 100 to 125 feet in length and 145 to 184 tons.\textsuperscript{19}

By the 1840s, many prominent shipbuilders in New York City were building double-ender ferryboats. William H.
Webb, noted primarily for his graceful sailing ships, built three double-enders in this period for city ferry lines. The Wallabout and New York were both 189 tons, 94 feet long, 23 feet in beam, and almost 9 feet in depth. Equipped with a rudder at each end of the hull, the ferryboats also had a wheelhouse on top of either end of the cabin. Webb’s third and last double-ender was the 280-ton Williamsburg built in 1846. The ferryboat measured 115 feet in length, 26 feet in beam, and 10 feet in depth. Each of the three ferryboats’ powerplants consisted of a vertical beam engine with a walking beam. They were all operated on the East River.  

Larger and more spacious ferryboats operated on the various routes to and from Manhattan in the 1850s. The Staten Island ferryboat Hunchback, built in 1852 by Jeremiah Simonson of New York City, was constructed with an upper cabin to make it the first double-decked ferryboat in New York Harbor. Her peculiar name was derived from the wooden housing built to enclose the walking beam that gave the boat an ungainly appearance.

Other ferryboats during this timeframe included the 700-ton Atlantic, of 177 feet in hull length, with an overall deck length of 190 feet, and a beam of 32 and a half feet. Built in 1857, the ferryboat elicited the admiration of the New York Times which called it, "... [The] largest and most perfect ferry-boat ever constructed." A special feature of the Atlantic was a hull shape contrived to plow
through ice. Another ferryboat built in the same year, John S. Darcey of 772 tons, 191 feet in length, 33 feet in beam, and 11 feet in depth, became the largest ferryboat in the New York City area during this time.

All ferryboats were not, however, of large tonnage or size during this period. The 527-ton ferryboats Ethan Allen and Commodore Perry, each measured 144 feet in length and 33 feet in beam. Others ferryboats were even smaller ranging below 500 tons.

In 1860 the New Jersey Railroad and Transportation Company ordered the construction of the ferryboat John P. Jackson for service between Jersey City and New York City. The ferryboat had the typical attributes and characteristics of other city ferryboats, although it attracted widespread acclaim as the most spacious and magnificent vessel of its class. The 860-ton wooden vessel, built by the Devine M. Burtiss Shipyard, had a 192 foot hull length, and a 210 foot deck length, 36 foot beam, and 12 foot depth, with a draft of 5 feet and 5 inches. The frame, built of white oak, chestnut, and other hardwoods, was fastened with copper spikes and bolts, and with treenails. A vertical beam engine with a single cylinder of 46 inches and an 11 foot stroke powered the vessel. Located in the hull, a drop flue boiler measured 30 feet in length, 10 feet in breadth, and 9 feet in height. The paddlewheels were 21 feet in diameter and had eighteen buckets.
Following the archetypes of double-ender ferryboats laid down by Stevens and Fulton, later ferryboat builders did not vary much from those conventions when building city ferries. A builder's foremost consideration when designing a ferryboat centered on making the vessel accessible to foot passengers as well as wagons, and to keep the two separate. To meet this requirement early builders had configured the ferryboat to accommodate wagons near the center of the vessel, and enclosed cabins along the guards for passenger comfort. Later ferryboat constructors retained this pattern, but some added a cabin above the main cabin to increase passenger capacity.\textsuperscript{28} By the late 1850s and early 1860s the durable double-ender ferryboat easily handled the environmental obstacles as well as the demands of the commuters traveling to the other side (Figure 2.1).

Usually the wooden and non-compartmentalized hull contained coal bunkers, machinery, water tanks, and boilers. Iron straps in the hull provided longitudinal strength to the shallow-draft ferryboats.\textsuperscript{29} Copper fastenings, a standard practice by the 1860s, held the strakes below the waterline, and iron-fasteners were used above the waterline. At either end of the hull was a rudder. When locked in position by a lock-pin, one of the Rudders acted as the bow, and the other as the steering rudder.\textsuperscript{30} Two auxiliary tillers provided means to steer the ferryboat if the steering ropes parted from the rudder.\textsuperscript{31}
FIGURE 2.1. FERRYBOAT J. W. WATERBURY.
(Courtesy of NYHS)
Ferryboat builders also incorporated features to enable the vessels to pass unhindered through icy conditions. Frozen waterways, and ice floes, during the winter months presented many problems to the builders when planning ferryboat hulls. Originally, Fulton and Stevens handled the situation with different degrees of success. Fulton had hoped to protect the paddlewheel by placing it in the middle of two hulls. Ice buildup, however, between the hulls caused the vessel to handle poorly in icy conditions.32 Stevens’s idea of relying on a single hull to plow through the ice, however, worked better and so became the lasting feature in the ferryboat hull design to combat ice. He formed the hull into a wedge shape to push ice away, and if caught between two ice floes, the hull simply slid over the floe until it compressed the ice downwards and away to continue safely with its trip. Additionally, he placed cork inside the hull to act like a giant life-jacket to prevent the ferryboat from sinking in case of a collision with an ice pack.33

Stevens’s son, Robert L. Stevens, a believer like his father in the safety feature of cork, by the late 1850s provided each of the Hoboken Ferry line vessels’ holds with bags and waterproof barrels of cork shavings to act as flotation devices in case of an accident. Another company in the same period, the Jersey City Ferry Company, used four vessels specifically designed to power their way through the
ice, "The boats are powerfully constructed to penetrate the ice, being built of solid timber above the water line for 30 feet each end." The ferryboat Atlantic, operated by the Union Ferry Company, was solid at each end for an additional twenty feet, or fifty feet, to contend with the ice.34

Ferryboats operating in the New York City waters had enemies besides ice. The moderate salinity of the waters around New York Harbor made it prudent to provide some form of protection from marine organisms. Coppering the bottom of the ferryboat, standard practice for ocean-going vessels of the time, assured longer service and less expensive hull repairs. Copper sheathing, backed by pitch, horse hair, and cloth, protected the hull from the ravages of marine organisms.35 Coppering of a ferryboat usually was undertaken several months after its completion to allow the exterior strakes to expand to their waterlogged capacity. Sheathing could then be safely fixed to the hull without straining and tearing the sheets by further expansion of the strakes. John P. Jackson's builders in early 1860, however, took a different approach to the coppering the vessel:

Contrary to general usage with such boats, her bottom was entirely coppered at the period of launching. It is customary not to copper them until they have been in service for six months.36

No explanation was given referring to this breach of shipbuilding practice. The early coppering, perhaps,
eliminated the cost of hauling the ferryboat out of the water to sheath the hull.

Machinery on ferryboats normally consisted of a vertical beam engine, although horizontal engines were not unusual. The engine was usually coupled with a walking beam extending far above the main deck. The A-frame and supports of the beam were enclosed by a partition running through the center of the boat.

Boiler positions varied from boat to boat, some were deep in the hold, while others were situated on the paddlewheel guards. Wood had been originally used as the heating medium for the boilers, but coal quickly replaced it as the primary heating source in 1831 when the Walnut Ferry line on the East River switched to anthracite coal for its furnaces. Paddlewheels on the ferryboats were made of iron with wooden buckets.

An ever present and lurking danger related to machinery on the ferryboat, and steamers in general, was fire. To combat this particular menace, the Williamsburg ferries, operating between Manhattan and Williamsburg on the East River, adopted "... every precaution ... to guard against fire, the boilers being thickly felted, and the decks and wood-work around the boilers and chimneys protected by facings of zinc." Most likely all ferryboats in this period had some form of fire protection similar to the Williamsburg ferries.
Decks and hulls were treated as two separate units by the ferryboat builder. Basically, the main deck acted as a platform resting on and overhanging the hull. Supported by outriggers where it projected over the hull, the deck was secured to the hull by bolts along the gunwale. This arrangement allowed for the lowering or raising of the deck, enabling a recently purchased ferryboat from one company to be specially fitted for the slips of another if necessary. The operation simply involved cutting the deck loose from the hull, and then jacking it up. A spacer was placed between the hull and the deck, and then both were bolted together.\(^4\)

The main deck had two gangways for carts and carriages separated by an enclosed engine space. Log curbs, roughly conforming to the deck shape, funneled the carts and wagons off the deck at the landing. The curbs terminated about five feet or so from each end. At the end of the curbs a wooden post, usually ornamented with a ball, rose up from a large block base. The deck of the ferryboat was crowned as a result of the paddlewheel shaft's placement slightly higher than the sheerstrake. An iron band completely encircled the deck, and acted as a rub rail to protect the wooden deck while at the slip.\(^4\)

Railings along the outer edge of the deck at each fantail of the ferryboat prevented passengers and teams from accidentally falling off the craft. Starting at the cabin,
the rails conformed to the vessel’s shape and continued within several feet of the boat’s end. Rails were supported by upright stanchions, while ordinarily at the boat’s end, a knee-shaped stanchion held the rail in place.43

The last item on the main deck of the ferryboat was the wooden superstructure. Cabins, in the years following Stevens and Fulton early versions, expanded and harmonized more with the vessel’s shape.44 Rejecting Stevens’s early practice of placing passenger cabins below decks, builders put the cabins, separated by gender, on the outside guards and on either side of the paddlewheel boxes. Fore and aft bulkheads separated the cabins from the gangways. Athwartship bulkheads enclosed the cabins, while the gangways remained open for cart and wagon traffic. Early Staten Island ferryboats had a bar in the men’s cabins which served candy, meats and other snacks for the ride. Lighting in the cabins was furnished by oil or gas lights.45

Builders in the 1850s responding to larger passenger numbers started to include a second cabin above the main cabin. A feature, for the most part, identified with ferryboats traveling a longer distance, such as the Staten Island ferryboats. The promenade deck, or upper deck, supported the upper cabin, as well as the fore and aft pilot houses. Additional passenger space was provided on the promenade deck with seats along the outside upper cabin wall. Awnings over these seats added protection from the
sun and rain during the warmer months.\textsuperscript{46} Atop the promenade deck cabin was the hurricane deck through which the smokestack and walking beam supports protruded.\textsuperscript{47}

Pilot houses on New York City ferryboats generally assumed three distinct patterns. The first was a circular freestanding house, the second also freestanding but square, and the third, a rectangle house backed by the upper cabin. The first two patterns mostly were associated with single-decked ferrys, while the third normally was used on double-decked ferryboats. Roofs usually were either cupola shaped for the first two patterns or flat for the third pattern. On top of the cupolas were ornaments, almost always an eagle on each roof.\textsuperscript{48}

Once the general configuration of the New York City ferryboats had evolved from the early Fulton and Stevens designs, it remained essentially the same for decades. An increase in size and additional cabin space over time allowed for more passengers, and assured the continuing operation of the ferry companies. While those boats were never built with the elegance and flamboyance of a Hudson River steamer, the daily commuter was provided a relatively safe, comfortable, and dependable journey on a city ferryboat. The double-ender ferryboat was, however, a well constructed and conceived vessel type that by the time the Civil War flared up proved to be an ideal candidate for naval purposes. This is made abundantly clear by the career
of Southfield, originally an Staten Island ferryboat that was resourcefully converted by the United States Navy to become a lethal weapon of war.
ENDNOTES CHAPTER 2


3Cudahy, Over and Back, 20-4.


6Cudahy, Over and Back, 40.

7Ibid., 34.

8Marestier, Steamboats of the United States, 22-3, 36.

9Cudahy, Over and Back, 80.


11Cudahy, Over and Back, 33.

12Ibid., 44-5.

13Ibid., 50.

14Ibid., 26.

15Ibid., 42.


17Cudahy, Over and Back, 380.


19Cudahy, Over and Back, 422.


Cudahy, Over and Back, 49.


Cudahy, Over and Back, 63.


Morgan to Fox, 7 November 1861, AY-Purchases of Merchant Vessels, Box 128, RG 45, NA.

Cudahy, Over and Back, 54.

Harlan Hollingsworth to Peter King, 19 November 1860, Piriah Case File, Civil War Court, Southern District of New York, Record Group 21-Records of District Courts of the United States, National Archives-Northeast Region, Bayonne, New Jersey.

Cudahy, Over and Back, 80.


The Jersey City Ferry Company ferries were the D.S. Gregory, John S. Darcey, Coblen, and Aresscoh. New York Times, 21 January 1858.

Harlan Hollingsworth to Peter King, 19 November 1861, Piriah Case file, RG 21, NANJ.


Morgan to Fox, 20 June 1861, Fox Papers, NYHS.

39Morgan to Welles, 9 November 1861, Box 128, AY-Purchase of Merchant Vessels, RG 45, NA.


42Harlan Hollingsworth to Peter King, 19 November 1860, Piriah Case file, RG 21, NA 21.


44Cudahy, Over and Back, 40.


46Photograph-Staten Island Ferryboat Hunchback: New York City Ferries-Tray 4:10:B, Dennis Collection, NYPL.

47Cudahy, Over and Back, 147-50.

48Photographs of New York City Ferries-Tray 4:10:B, Dennis Collection, NYPL.
CHAPTER 3
FROM FERRYBOAT TO GUNBOAT

The ferryboat Southfield was launched on 13 June 1856 at the John Englis' shipyard in Manhattan on the East River. On 30 June 1857, the ferryboat completed her trial trip and on 2 July she was enrolled in New York Harbor. The wooden ferryboat was 200 feet and 6 inches in length with an overall deck length over guards of 210 feet. She had a 34 foot beam, and an over guards total beam of 50 feet with an 11 feet and 8 inches depth of hold. Registered at 751 tons, the ferry had a 6 feet 6 inch draft (Figure 3.1). No masts, galleries, or heads were on board at the time of her enrollment.\(^1\) Southfield could carry 4,000 passengers per trip, including space for numerous wagons and carts. Safety equipment consisted of 500 life preservers in 1857, which had been increased by 1861 to 1000 life preservers and one lifeboat.\(^2\)

The newly built ferryboat was specially equipped for the rigors associated with the New York and Staten Island Ferry Company's route from Staten Island to Manhattan by way of New York Harbor (Figure 3.2). The hull of the ferry was described in the enrollment papers as having a round stern with a round tuck. Due to ice floes during the winter months, the hull at each end consisted of solid timber for thirty feet towards amidships.\(^3\) Enclosed in the copper-sheathed hull were fresh water tanks, boilers, and the
FIGURE 3.1. FERRYBOAT SOUTHFIELD.
(Courtesy of NYHS)
engine. Above, the ferryboat had sturdy cabins on the main
deck. The power plant was built by Murphy of New York City,
and consisted of a vertical beam engine, with a forty-four
inch cylinder and ten foot stroke, and a large boiler, which
powered the sidewheeler up to 12 knots.⁴

John Englis had his shipyard on the East River at the
end of East 10th Street New York City.⁵ He was born in the
city in 1808, and apprenticed in 1824 for four years to the
shipbuilding firm of Smith and Dimon, which excelled in
steamboat construction.⁶ John Englis had built nineteen
steamboats prior to building Southfield, and she was his
first ferryboat. Englis remained one of the foremost
steamboat builders in New York, constructing eighty-nine
steam vessels, and at least eleven ferryboats, for use
throughout the world, during more than fifty years until his
death in 1888.⁷

The Staten Island Ferry schedule, after Southfield
appeared on the route in the summer of 1857, consisted of
four boats operating during the weekdays and Saturday with
an extra boat added to handle Sunday crowds.⁸ The
company’s route started at Whitehall Street in Manhattan and
then made stops at Landing Number 1-Tompkinsville, Landing
Number 2-Stapleton, and Landing Number 3-Vanderbilt’s
Landing in Clifton.⁹ During the summer months, the
ferryboats left Whitehall Street and Staten Island every
hour from 6:00 A.M. to 7:00 P.M. On summer Sundays the
ferryboats left on the half hour. The winter schedule found the boats leaving an hour later in the morning and continuing until 5:00 P.M. Occasionally and weather permitting, a night ferryboat operated from Port Richmond to Stapleton and then to the city. Returning from the city at 12:00 A.M., the night boat then made the usual round of the company's three landings. The fare for the 30 to 40 minute trip from New York City to the Staten Island landings was six cents.

Southfield and the other Staten Island ferryboats operated in a tumultuous and wild climate in which collisions, deaths, and other mishaps occurred on a daily basis. In fact, the New York Times in early 1858 stopped mentioning minor ferryboat incidents, because accidents were too frequent to merit further attention. Only five days after her enrollment, Southfield appeared in the pages of the Times. The mention in the paper resulted from a commotion caused by a couple of gentlemen and some disreputable ladies.

Aside from experiencing trouble with passengers, Southfield also encountered difficulties with the natural environment of New York Bay. During her career on the Staten Island to Manhattan route Southfield was involved in three accidents due to poor weather conditions. The first mishap involved Southfield and Hunchback, another Staten Island ferry, on 13 October 1857. During the 5:00 P.M. run,
Southfield and Hunchback collided with each other between Robbin's Reef and Bedloe's Island in the Upper Bay due to fog. The impact stove in Southfield's starboard bow and gashed the boat down to her water level. Hunchback's bow also suffered extensive damage. No injuries were reported as a result of the collision.\textsuperscript{14} Two days later Hunchback went back into service, although no mention was made whether Southfield was taken out of service for repair, or when she returned to the route.\textsuperscript{15}

A second collision occurred between Southfield and the schooner Julia on 14 January 1859, again because of fog. During the ferryboat's last trip from Manhattan, the vessel plowed into Julia, which was anchored alongside the Public Store Dock at Quarantine Landing. The schooner lost her main boom and a stern boat, while one of Southfield's paddlewheels was disabled along with other minor damages.\textsuperscript{16}

A minor incident took place during a severe gale in the Upper Bay. On 2 November 1860, a gale blew Southfield off her normal route and in between the Governors Island fort and the Buttermilk Channel.\textsuperscript{17} The double-decked superstructure of the ferry most likely acted as a sail, causing her to handle poorly in a strong wind.\textsuperscript{18}

Despite collisions and hard wear during the winter months, Southfield in 1860 was listed as strong and in good order. An independent report of the company's vessels stated that all of the Staten Island ferryboats had been
well maintained over the years, so the company could be expected to operate them safely for years to come. A petition posing a different viewpoint was, however, issued seeking redress from the Staten Island and New York Ferry Company's perennial inadequate services and condition of the ferryboats. The plaintiffs, commuters of the line, stated that *Hunchback* and *Southfield*, which had been inspected in 1860, were among some of the "shoddy purchases" made by the Navy in 1861.¹⁹ The untimely arrival of the Civil War also caused three new ferryboats destined for service, *Clifton*, *Westfield*, and *Northfield*, to be sold to the Navy.²⁰ Those additional ferryboats the commuters felt would have greatly improved the situation on the Staten Island ferry.

Larger and more important events crucial to the nation's preservation, however, dictated a new role for the ferryboats. Preparations for the upcoming Burnside Expedition to the sounds of North Carolina to subdue Roanoke Island and a series of small port cities demanded shallow-draft vessels. On 3 December, Assistant Secretary of the Navy Gustavus V. Fox wrote to Flag Officer Louis M. Goldsborough, in charge of the naval contingent, outlining the search for suitable vessels by Morgan in New York ". . . to see if there is anything with 6 feet draft not yet purchased."²¹

Morgan, after receiving orders for more shallow-draft merchant vessels, immediately went to view the remaining
Staten Island ferry fleet. Shortly afterwards, Morgan remarked about one of the ferryboats, "The hull of the 'Southfield' is perhaps the strongest in the port." Three days later, Morgan, received a telegram from Fox authorizing the purchase of Southfield for $65,000. Due to the urgent need of the vessel, Southfield immediately underwent an overhaul at William H. Webb's shipyard to add minor necessities, fittings, and load coal prior to leaving for Hampton Roads. From the moment of purchase Southfield would no longer be a Staten Island ferryboat but a lethal weapon adapted for the contingencies of war (Appendix B).

Southfield and the other shallow-draft merchant vessels were specifically purchased to overcome the environmental obstacles anticipated during the Burnside Expedition. Natural impediments included the shallow sounds in North Carolina, narrow and winding rivers draining into the sounds, and the primary entrance into Pamlico Sound, Hatteras Inlet. The ferryboats were to act as mobile gun platforms to cover the amphibious assault planned for Roanoke Island.

After Southfield's brief outfit at Webb's shipyard, the vessel departed for Hampton Roads and arrived there on 3 January 1862 to begin the transformation process from a ferryboat into a gunboat. A brief survey determined that, aside from her weak and old boiler, the vessel was in a
sound condition. Writing to Fox in late December, Goldsborough explained the condition of the vessels coming into Hampton Roads for the expedition:

Vessels, necessarily, are sent to me from New York without the slightest preparation of any sort or kind for service—no guns, no men, no place for powder, none for shells, &c, &c, &c; all of which have to be arranged and to fix them only for mounting of guns at all properly is a very different thing from what some suppose—involved a great deal of labor in some cases, and really a good deal in all, of carpenters, blacksmiths, &c, &c. From 3 January to 16 January 1862, naval carpenters, blacksmiths, and other personnel worked on transforming Southfield into a gunboat. Regarding changes to Southfield, Goldsborough proposed to quickly, "... build her magazine + shell-room, make + place her iron work for breechings, put up a log-work at either end to secure breechings to, &c.&c." In addition to preparing armament placements for the new gunboat, alterations for accommodating crew, and other facilities also commenced. On ex-ferryboat Commodore Perry, the ammunition, chain, and cable lockers had been converted from the men's cabin, while the women's cabin was turned into the messroom and officer's quarters. The enclosed spaces between the cabins, or gangways, on Commodore Hull, were used for the crew to hang their hammocks. Divisions to the cabins and gangways on those ex-ferryboats most likely resembled those made to Southfield.
Concerning the ordnance, Goldsborough believed the gunboats needed guns of large size, or "... the bigger the better." Keeping with this belief, Goldsborough armed Southfield identical to Hunchback, with three 9-inch smoothbore Dahlgrens and one 100-pound Parrott rifle. The forward battery consisted of the 100-pound Parrott and one 9-inch gun with the remaining guns at the aft battery. The Parrott, as well as the 9-inch guns, were mounted on a broadside Marsilly carriage requiring double-breecnings, side tackles, and fixtures. Supplementary features associated with the ordnance on board Hunchback, as with Southfield, included, shell and shot lockers in the hold. In addition, gun crews were equipped with spare tillers and relieving tackles in case the vessel lost her steering capabilities. By 1863, Southfield's battery had been increased with two 9-inch Dahlgrens and one boat howitzer to make her one of the more powerful gunboats in the North Atlantic Blockading Squadron.

Even as the ex-merchantmen were prepared for war, workmen started stocking the vessels with provisions, stores, and ammunition. The storeships Badger and Brandywine delivered to Commodore Perry barrels of bread, butter, gallons of whiskey, flour, desiccated potatoes and mixed vegetables, candles, fire buckets, and soap among many other articles. From the ordnance office, gunboats received
muskets, cutlasses, pistols, revolvers, boarding pikes, shell, shot, canister, and barrels of powder charges. To ensure potable water, each vessel had been outfitted with a condenser to supply water to the crew, as well as the army’s needs. Goldsborough wrote to Fox, "Every vessel has on board 60 days provisions, each one is well supplied with water, ordnance, stores, &c. . . .," for the upcoming foray to North Carolina. With all the accoutrements of war on board the ex-ferryboats, the captain of Commodore Perry commented about the new gunboat, "She was then a ferry boat. She is now a man of war, and I hope to make her quite a formidable one."

Soon after her arrival at Hampton Roads, Southfield received her commander, Acting Volunteer Lieutenant Charles F. W. Behm, on 9 January, and a complement of officers. Behm had previously commanded the bark Braziliera off Wilmington, North Carolina. To complete the crew requirements, Goldsborough on 8 January, ordered fifty-five men from the receiving ship Roanoke detached to the gunboat. Later crew composition included contrabands, ex-slaves who had enlisted into the navy and mostly acted in the menial positions as coal heavers, cabin boys, and the like. In January 1862, the crew numbered sixty-one and by 31 March 1864 had reached a total of 120 crewmembers, excluding officers.
Aside from the outward changes to the ferryboat, a subtle increase in draft occurred as a result of the added weight of ordnance, ammunition, and stores. Southfield's draft had been originally six and a half feet. With the addition of stores and a heavy load of coal while at Webb's shipyard the draft dropped to seven feet and four inches. As a result, additional caulking was necessary to account for its new waterline.\(^4\) Completion of the large-scale conversion changed the gunboat's draft, depending on her load, from nine to nine and a half feet.\(^4\) Southfield had been purchased for her six-foot draft to overcome the geographical challenges in North Carolina coastal waters; the increase in draft altered the boat's shallow-water capabilities.

When joining the assembled fleet off Hatteras Inlet on 17 January 1862, the gunboat along with many others failed to pass through the inlet on account of their draft (Figure 3.3). The "Swash," a shallow sandbar in Hatteras Inlet, causing a depth of around seven and a half feet deep, precluded an easy crossing. Goldsborough reported that both Stars and Stripes and Southfield had difficulty getting over the sand bulkhead and, "Both of course worked up a good deal of sand into their engines & had to re-pack their pistons &c after getting over." Southfield finally crossed the submerged obstacle into Pamlico Sound three days later.\(^4\) Once in the sound, the gunboat received two launches, along
FIGURE 3.3. SOUNDS OF NORTH CAROLINA.
with the accoutrements of guns and implements required by each.\textsuperscript{44}

Following the reassembling of the combined invasion forces, the expedition began its move towards Roanoke Island on 5 February.\textsuperscript{45} Prior to the move, Goldsborough had decided to shift his flag from Philadelphia to Southfield, as the former was not fit for combat duty.\textsuperscript{46} The battle plan for the naval contingent called for all vessels equipped with 9-inch guns to cluster around Southfield to bombard Confederate positions and to provide a cover fire for the amphibious operation.\textsuperscript{47} Confederate defenses at Roanoke Island consisted of a motley assortment of civilian craft outfitted with guns and several earthwork forts. On 7 February, Southfield commenced hostilities by firing on the enemy fleet, and later opened fire on the forts.\textsuperscript{48} The next day the gunboats resumed firing on the earthworks from early until late morning, when ordered to discontinue firing for fear of hitting Union land forces. Goldsborough, after the ceasefire, transferred his flag back to Philadelphia, while Southfield remained at anchor off Pork Point.\textsuperscript{49}

Following the brief engagement, Behm reported that Southfield's length and draft caused her to handle poorly during the battle. All the naval gunboats, however, had encountered difficulties when approaching the forts for better accuracy due to shoal waters. Continuous soundings were necessary to approach within an reasonable distance to
In spite of her limited maneuverability, the gunboat sustained only minor damage to her upperworks from a 32-pound shot during the first day of action. Repairs to the upperworks were completed by carpenters several days after the battle. Damage to the fleet's ferryboats could have been worse according to the captain of Commodore Perry, who stated, "... Had the enemy fired shell instead of round shot we must have been destroyed."

The next major objective of the expedition was to take New Bern, where the ex-ferryboats again demonstrated their ability to effectively reduce earthworks. On 13 March land forces proceeded towards New Bern led by a constant artillery barrage by the point guard of gunboats. Leading the attacking forces, Southfield, along with Commodore Perry, engaged a Confederate battery, bombarding it until foggy conditions prevented any further attack. In the morning the gunboats resumed firing on the battery and, receiving no return fire, captured the abandoned earthwork.

The following day the Union forces successfully captured the town. During the day's engagement, Southfield had collided with Hetzel, stoving in one of Hetzel's launches. Behm later reported to Goldsborough of a more noteworthy event during the day's battle:
I hope, that the Southfield did her duty yesterday [14th], our Rifle pitched a shell into the magazine of Fort Ellis, blew it up + no doubt contributed, to make the Rebels run faster.55

Following the Union victory at New Bern, Southfield remained at station on the Neuse and Trent rivers until ordered to Elizabeth City on 7 April, and arrived there two days later in a tense situation.56

Rumors had reached Union naval commanders of an impending assault on Elizabeth City by Confederate armor-plated vessels through canals located upriver from the city. While concerns ran high in Elizabeth City about enemy ironclads, Goldsborough in Hampton Roads felt the canals limited the size of the vessels, and writing to the commanding officer of the flotilla expressed his lack of concern, "You can, I am satisfied, readily capture or destroy them [the ironclads] with the ferry-boats under your control by running them down."57 To deny Confederate access to the Pasquotank River, a Union force of 3,000 troops was deployed in an unsuccessful attempt to destroy the locks of the Dismal Swamp Canal on 17 April. The army failed to ruin the locks which caused the naval ships to remain off Elizabeth City to guard against a potential southern ironclad incursion.56

The Union plan to thwart the impending attack called for using ex-ferryboats Commodore Perry and Commodore Barney as point guards upriver from the city, while Southfield and
other gunboats would form a defensive line across the Pasquotank River in front of the town. Tactics, however, would change when the ironclads made their appearance in the river. The gunboats would withdraw to the sound in order to have more maneuvering room to combat the enemy warships. A state of readiness existed on the Pasquotank River until Federal forces captured Norfolk in mid-May, erasing fears of Confederate ironclads bursting forth from the Dismal Swamp Canal.59

Later in the month Southfield, along with several other boats, was ordered to the James River to aid in the fledgling Peninsula Campaign in Virginia (Figure 3.4). Behm must have been delighted. He had only two days earlier written to Goldsborough asking, "... to have the Southfield called away to some more active station ... ."60 Southfield arrived in Hampton Roads on 1 June, and then proceeded up the James River on the third to City Point.61

The converted gunboats, during the early phase of the Burnside Expedition, performed well under the combat and environmental conditions. Although shoal waters prevented easy navigation for the shallow drafted gunboats, their large caliber guns provided access to Confederate earthworks along the open sounds. Apparently in more confined waterways, the hastily converted gunboats needed some protection from snipers. Each gunboat's crew came up with
FIGURE 3.4. JAMES RIVER.
its unique solution to the problem. On board ex-Statens Island ferryboat *Hunchback* for example, the crew created "... a breastwork of sails on port + starboard bow to protect [themselves] from musketry."\(^{62}\) Conditions would not change much in *Southfield*'s new area of operations in the James River, but slight modifications to the gunboat due to riverine warfare would again alter her appearance.

Optimism for a quick advance on Richmond ran high among the Federal forces in Virginia in early June 1862. McClellan had captured Mechanicsville on 24 May, and the Battle of Seven Pines on 1 June, although of an undecided outcome, had not extinguished hopes of Union success in capturing the Confederate capitol in a timely manner. In fact, thoughts of an early and decisive outcome pervaded the navy's high command short-term planning. They ordered gunboats on the river were ordered stocked with as much coal, sundry stores, and ordnance material as safely possible for a quick withdrawal to another theater of the war at the impending close of the successful Peninsula operations.\(^{63}\)

Even though McClellan had a powerful naval squadron to support his army, he had ignored Goldsborough's advice in late May to move his troops along the James River under gunboat protection. Instead, McClellan chose to remain encamped around the Chickahominy River well out of effective range of naval support despite superiority in the river up
to Drewry’s Bluff in early June. The navy could only sit on the sidelines providing moral support to the army, denying Confederate movement on and across the James River, and scaring the residents along the riverbank. From early to middle June the gunboats performed routine tasks of carrying mail, protecting supply schooners, engaging Confederate infantry and artillery, among other miscellaneous tasks.  

Shortly after her arrival on the James River, Southfield steamed to unoccupied Fort Powhatan to prevent southerners from equipping it with artillery pieces. Commander Jonah P. Gillis, senior officer of the river naval forces, ordered the gunboat to remain at anchor well off the fort to avoid musket fire from the riverbanks. Apparently, snipers were plaguing the gunboats; he had asked Goldsborough to supply him with seventy-five to one hundred heavy boiler iron sheets to protect the gunboats against sharpshooters. After guarding the fort for ten days, Southfield steamed to Norfolk on 17 June to receive armor plating to case her pilothouses. This was the first of several modifications to be made in response to the circumstances of brown-water combat. Following the casing installation, the gunboat steamed upriver to distribute leftover boiler iron and supplies to Monitor and Port Royal prior to participating in an expedition up the Appomattox River the next day.
Federal political and military officials in late June strongly believed an impending offensive operation would finally and decisively defeat the Confederate forces around Richmond. To ensure that Confederate General Robert E. Lee would not have an avenue by which to escape, an expedition was ordered up the Appomattox River to destroy a railroad bridge that Lee's army might use to retreat south.\textsuperscript{66} The plan called for a small naval force to steam upriver eight or nine miles below Petersburgh, and then to send several launches to destroy the bridge.\textsuperscript{67}

*Southfield* and nine other vessels, including *Monitor*, departed from City Point up the Appomattox River on 26 June to begin the mission. During the voyage upriver, the gunboats constantly shelled both riverbanks to prevent Confederate forces from impeding the small flotilla's progress. Nature, however, proved more of a hindrance than Confederate retaliatory actions. A falling tide on the twenty-seventh caused nine of the ten vessels to ground some distance from the target. Two days later, *Southfield*, *Monitor*, and *Delaware* were ordered to return to the James River, while the rest of the fleet retreated later the same day. After the unsuccessful expedition *Southfield* remained at City Point guarding army transports and supply schooners until early July.\textsuperscript{68}

Between 27 June and 3 July McClellan changed his decision to remain along the Chickahominy River, and
consequently caused the gunboats to participate more in the Peninsula campaign. On 1 July the Battle of Malvern Hill finally demonstrated the gunboat's awesome firepower against land forces. Confederate General D.H. Hill had reported the Union gunboats had murdered his exposed troops. *Southfield* missed the engagement at Malvern Hill because she had grounded near City Point on 30 June, and remained there until 3 July. Union forces reached their new encampment at Harrison's Landing on the James River on 3 July following the running engagement known as the Seven Days Battle.  

Arriving at Harrison's Landing, McClellan wanted the gunboats to protect his troops, camp, and communications. Union gunboats were ordered to enclose the camp by anchoring in two separate groups, one off Kimates Creek and the other off Herring Creek. *Southfield*, along with *Monitor* and several others, was anchored with the latter group.  

Encompassed in this protective fashion, Lee expressed reluctance to attack the Union army, stating:

... nor do I wish to expose the men to the destructive missiles of the gunboats... I fear he is too secure undercover of his boats to be driven from his position.

The gunboats were also needed to protect the key points of City Point and Fort Powhatan to ensure that supplies reached the army and to control the river channel.  

During the stalemate generated by the successful naval bastion around the Union army, the gunboats patrolled key
points along the river, and steamed with convoys of troop carriers, supply schooners, and other gunboats. On 3 August, while steaming towards City Point on a routine task, Southfield was fired upon by a Confederate battery, and during evasive actions ran aground. In retaliation the gunboat opened fire and forced the abandonment of the point by the southerners, who later in the day returned to send another barrage at the grounded vessel. The gunboat remained aground for several days. After lightening the vessel, four tugs were finally able to refloat the gunboat three days later. The gunboat immediately rejoined the rest of the flotilla above City Point. One commanding officer blamed Southfield's grounding, presumably a frequent event among the river squadron, on the tortuous bends that denied a clear line of vision to navigate the river.

Following the groundings and general deterioration from operations in North Carolina and Virginia, Southfield was rapidly beginning to show the effects of hard campaigning. When Southfield had been reviewed in Hampton Roads prior to the Burnside Expedition, engineers reported the only deficiency with the ferry boat was with her boiler. By mid-August the boiler was finally on the verge of breaking down. Only after repeated complaints lodged by Southfield's engineers did the fleet engineer finally inspect the boiler. He found the water bottom on the boiler in bad shape, and the iron thin in several places with small
leaks. He suggested the only long-term solution would involve removing the waterbottom and cap it with new iron, which would last for years, and only take two weeks to accomplish.\textsuperscript{74}

The repair was not authorized, however, because it was determined that capping the boiler would actually take a month, and patching the leaks would take less time. Southfield’s second and third class engineers tendered their resignation from the navy on 12 August, protesting that patches would not make the boiler safe to operate. Writing to Commander Wilkes, the fleet engineer speculated about the probability of loss of life due to patching the boiler stating, "... it would depend entirely, upon the nature, and locality, of the rupture, as well as the proximity of individuals there to." Wilkes then wrote Welles about the situation over the boiler patches, and the expediency of patching the boiler, rather than capping the boiler. He stated his need for the gunboat declaring her as one of the strongest and most powerful in the flotilla. By 23 August, after eleven days spent patching the steam plant, the gunboat was back on the river near City Point.\textsuperscript{75}

Southfield, however, returned to duty at the waning stages of the Peninsula Campaign. Stalemated from early July at Harrison’s Landing, the Army of the Potomac began to withdraw along the Chickahominy River on 15 August to Hampton Roads. By 29 August, the large army had departed
from the peninsula having failed to capture Richmond. With the removal of the army from the peninsula, the James River Flotilla was disbanded, and Southfield rejoined the North Atlantic Blockading Squadron on 1 September. Acknowledging the transfer back to his command, Goldsborough noted the gunboat’s boiler was in need of extensive repairs.  

After the resignation of Goldsborough as Flag Officer of the North Atlantic Blockading Squadron, Samuel P. Lee took over the command on 5 August. Behm immediately wrote to the new commanding officer suggesting several proposals to alter the gunboat for more efficient duty. Behm wrote that boiler repairs would require from six weeks to two months, and during those repairs supplementary work could increase the vessel’s effectiveness. At the time of the letter, the decks were being replaced with oak and caulked since the original deck was rotting.

Behm’s first suggestion called for moving the boat davits to alongside the cabin. The prior davit assemblies apparently were somewhere along the aft battery. During time of impending action the launches were brought onto the deck and stowed away from the guns. The launches could not be lowered below the guards because they ran the risk of being smashed by the hull.

Second, the saloon, or top cabin, needed to be removed, as strong sidewinds caused the gunboat to handle poorly. The crew’s and officers’ quarters in the saloon
would then be removed to the main cabin. If, however, the saloon was not removed, Behm proposed installing a canvas cover to prevent the incessant leakage in the officer’s and crew’s quarters during rainy weather.

Third, Behm wanted the main cabin shortened at each end by sixteen to twenty feet to accommodate two more guns, another 100-pound Parrott rifle gun and a 9-inch Dahlgren smoothbore. The additional guns would raise the armament on board to six heavy guns and one boat howitzer. He believed the gunboat deserved a larger battery and was strong enough to handle the extra load. Especially after repairs to the boiler, not only would the gunboat be heavier armed, but faster, reaching an estimated speed of twelve to fourteen knots in smooth water. Presumably most of the request was granted for the gunboat, for after the work was completed she was armed with two more large guns.

By late October, Southfield’s repair’s were nowhere near completion, despite crews working over time. Urgent pleas were being written to Lee by Union army commanders in the sounds of North Carolina pressing for the gunboat’s services to respond to reports of Confederate activities:

... the light-draught and heavy battery of the Southfield, which vessel has for some time been undergoing very slow repairs at Norfolk, make her services absolutely necessary in the Sounds.

The need for Southfield in the sounds arose because the army relied on gunboats rather than defensive earthworks to
secure their positions. Navy commanders in the sounds also expressed an interest in obtaining the services of the gunboat. Lee wrote to H.K. Davenport, senior officer in the sounds, on 24 October:

I will send you the Southfield as soon as she can be got ready. This, I am told, will take three weeks yet, but I will make every effort to expedite her departure. She will come to you in good order, and with a battery of four IX-inch guns, and at least one, and perhaps two, 100-pounder Parrots.80

The delay in repairing Southfield was a result of many factors, primarily that she was anchored off the army repair facilities in Norfolk acting as a floating battery. Much time was spent transporting material and workmen back and forth to the gunboat. Repairs included reducing the dip of the paddlewheels, adding oak planking to the decks and pine planking to the sponsons, repairs to the engines, and fabricating a new boiler, in addition to the modifications suggested on 5 September.81

By 15 November Southfield needed eight more days of repairs before being sent to Plymouth. The crew that had been dispersed to other ships was ordered back to the gunboat, and thirty-two new members were also detached to the boat. Fifty tons of anthracite coal and two cords of firewood were stowed for the journey south. On 26 November, Southfield went through sea trials to ensure the recently built boiler, and engine operated correctly.82
Completing a three-month refurbishment of repairs and alterations, the gunboat departed for Plymouth, North Carolina on 2 December. Equipped with two additional 9-inch guns mounted on Marsilly carriages, Southfield's improved battery made her a more formidable weapon for use in the sounds. Reaching Hatteras Inlet a day later, the gunboat once again grounded on the "Swash," and remained there for two days before extricating herself. Southfield reached Plymouth on 7 December to take up station with the small Union flotilla anchored off the town.

Several days later in the early morning of 10 December, Southfield was welcomed to the river by a surprise attack on the town. Taking advantage of the presence of a solitary gunboat, a Confederate force of 300 infantry, three artillery pieces, and 70 cavalry advanced on Plymouth. The city was defended by only 150 Union troops and the recently arrived Southfield. Pandemonium reigned in the town with civilians, as well as soldiers, crowding the riverbank. Southfield's crew immediately went to their battle stations and trained all the guns to the port side. However, unfamiliar with the layout of the town due to their recent arrival, Behm ordered a cautious and delayed response for fear of hitting friendlies.

Meanwhile Confederate artillery rained grape, canister, and round shot on the gunboat with one shot hitting her steam chest. Steam burst from the drum and
filled the gangways, which prevented the gun crews from receiving powder and rounds. Disabled by the shot, Southfield floated downstream aided by launches, trying to keep her from running aground along the river bank. About a half an hour later, Commodore Perry responding to the gunfire at Plymouth, returned upriver, found the disabled Southfield about a mile and a half below the town, and towed her back. By the time the two gunboats arrived off the town, the Confederate force had retreated from their raid.  

Immediately after the battle, Behm was censured by his superiors for Southfield’s poor execution during the attack. Commander Murray, senior naval officer in the sounds, wrote to Lee, "I regret, extremely, to hear of the want of skill and gallantry displayed in the management of Southfield during the recent attack on Plymouth." Murray even suggested relieving Behm of his command. Lee, concerned about the handling of Southfield, sent a missive with specific questions to be answered by Behm, ranging from battery readiness to damages incurred during the attack. Behm responded with a lengthy reply to each of Lee’s inquiries point by point.

To the question about battery preparedness, Behm responded by stating that all the guns were amply supplied with rounds the previous night in case of action. In reply to ammunition expended, he wrote that forty-three rounds
were fired on the Confederate attackers before steam from the ruptured steam chest prevented men from reaching the after and forward magazines. Casings around the pilot houses were partially let down during the evening before the attack, so that the compass could provide an accurate bearing on the town.\footnote{89}

Overall, \textit{Southfield} had received eight hits, two through the smokestack, one at the port forward davit, one through the pilot house, one passing through the wardroom and into the steam drum, one along the guard, and two shots hit the number three 9-inch gun causing it to crack. \textit{Southfield} also received innumerable shrapnel and canister rounds discernible by the marks left on the deck and one of the pilot houses.\footnote{90} During the brief engagement the gunboat suffered several wounded and dead.\footnote{91}

Behm concluded, after answering the remainder of Lee's questions, by stating that if he had known the intended use of the gunboat in the Roanoke River, he would have requested that the vessel be outfitted with twelve howitzers in broadside, one Parrott forward, and one 9-inch gun aft. Arranged and armed in this fashion, Behm felt, the gunboat could better guard the town, and patrol a river only four or five hundred yards wide by responding speedily to sudden attacks. He then suggested that the gunboat be plated with at least one hundred sheets of boiler iron, either of three-
eighths or one-half inch thick, as soon as possible in order to operate safely in the river.\textsuperscript{92}

The damage sustained by Southfield also brought to light the vulnerable position of the steam drum and the ability of escaping steam to prevent resupplying the guns. Lee ordered that the steam drums or the most exposed parts be protected in a practicable way, on board both ex-ferryboats Southfield and Commodore Perry. He suggested they be sheathed with thick wood and then covered with iron plating. In addition, Lee wanted the magazines of the two vessels situated so that the guns could be supplied at all times. Several weeks later, Flusser wrote to Lee requesting the convening of an examining board to report the most feasible way of protecting the steam drums on both vessels. He also stated Commodore Perry’s steam drum was already encased in three-eighths inch thick boiler iron. By 12 December, Southfield’s damaged steam drum had not yet been patched, but was expected to get up steam the following day.\textsuperscript{93}

On 17 January 1863, Flusser to Lee about stating there was no easy solution that could remedy the problem even if the steam drum had a protective jacket of wood and quarter inch iron. In addition, the engine parts above the waterline needed as much protection as the steam drum’s which would require an enormous amount of iron.\textsuperscript{94} Although Lee wanted the repairs done quickly, the boiler iron had
still not made it to the sounds by the middle of March. The problem was apparently never solved, or at least not on all the gunboats serving in the sounds.  

Following the attack on Plymouth, Southfield and other gunboats on station in the Albemarle Sound maintained a constant state of readiness in anticipation of renewed Confederate attacks. Gunboat patrols in the Chowan, Pasquotank, Roanoke rivers and the sound from December 1862 to March 1863 served to interdict contraband goods and to limit Confederate guerilla activities. Albemarle Sound remained quiet during this period, but in late March, Confederate forces laid siege to Washington.

Once again the gunboat’s large guns were called upon to attack earthworks. The crisis developed on 30 March 1863, when 9,000 Confederate troops besieged Washington and denied Union supply lines on the Pamlico. Confederate troops took advantage of several extant earthworks and water obstructions on key points to effect a blockade on the river above and below the town. On 1 April, Flusser in Plymouth was ordered to send as many gunboats to Washington as possible. Southfield left shortly after the order was received, and rendezvoused with Seymour near Winfield and towed her to Washington. The two vessels arrived at Blount’s Bay on the third.

Immediately after arriving several miles below the cordoned town, Southfield and two other gunboats fired forty
rounds at the Confederate controlled earthworks at Hill’s Point. Later in the evening the gunboat sent several launches loaded with supplies through the obstructions toward the beleaguered town. From 4 to 13 March Union gunboats shelled the earthworks, and sent several launches through the Confederate obstructions. The situation remained an impasse until the supply schooner Escort made her way safely through the Confederate gauntlet. Now that the Union troops in Washington could hold out indefinitely, Confederate forces vacated the area on 16 March. A day later Southfield returned to Plymouth. During the siege the gunboat expended 326 rounds of ammunition.\(^9\)

On 2 May, Flusser received orders from Davenport to send Southfield to New Bern so the vessel could undergo repairs to her decks, damaged by exposure to the sun, and obtain stores and ordnance.\(^9\) Several days later the gunboat arrived in New Bern, and work started on repairing the decks and restocking depleted stores. Eight days later the gunboat returned to Plymouth, anchoring there on 21 May.\(^10\)

Events during the following months centered around routine patrols up the Roanoke River and other rivers draining into Albemarle Sound. On a mission to Chowan River with Miami and Commodore Perry in mid June, the gunboats encountered difficulties with shoals. Miami grounded and for several hours Southfield and Commodore Perry tugged at
the stricken gunboat before finally extricating the vessel. From 5 to 7 July the gunboat participated in a foray up the Roanoke River to Williamson to harass Confederate forces. Other excursions upriver from Plymouth were also undertaken during the following months. The gunboats’ primary duty, however, was to protect the Union position at Plymouth. The military commander at Plymouth believed the earthworks could withstand a Confederate assault without gunboat assistance, but conceded the gunboats were a powerful deterrent for both water and land assaults on the town.101

By mid-1863 Southfield was once again in need of repairs. Behm had not yet received awnings he had been requesting for months, and reported "The men are suffering, & the decks are splitting & cracking, & will be ruined." His request for awnings was forwarded by Lee to the Commandant of the Brooklyn Navy Yard for action. In September, Southfield’s engines were in need of an extensive overhaul and were "out of whack." A fleet engineer was dispatched to examine the engines a month later and, if possible to make the repairs at New Bern. A delay, however, must have occurred and the gunboat’s engines and other problems were not repaired until November.102

During the fall of 1863, Southfield’s crew experienced a rapid turnover of commanders. Having commanded Southfield throughout her entire naval career, Behm relinquished his post in early October due to an unspecified illness. Taking
temporary control of the gunboat until Behm’s return was William Newman, the boat’s former executive officer. Behm, however, never returned to resume command of the gunboat and on 24 November, Charles A. French, formerly captain of Whitehead, assumed stewardship of the vessel. His first task was to make a report of Southfield’s condition.103

French found the fore and aft shell and magazine rooms unsafe and in dire need of repairs. The bulkheads of the compartments had shrunk so that light could pass through into the spaces, and the rooms had no protective lining. Only twelve or fifteen feet separated them from the fireroom, which also did not have screens to prevent the spread of fire into the magazines. French, however, believed that seasoned lumber and screens would easily rectify the dangerous situation. Presumably, necessary steps were undertaken to ensure that the gunboat met with French’s approval.104

The new year arrived uneventfully for the gunboats stationed in Albemarle Sound. However, in late January 1864 Confederate forces descended upon New Bern, the Union’s primary supply station in the northeastern sounds. A speedy response by the gunboats Southfield, Miami, and Whitehead from Plymouth, strengthened the Union positions on the Neuse and Trent rivers and thwarted the attack. By 18 February Southfield was able to steam back to Plymouth.105
In early March, *Southfield* and *Whitehead* were sent forty miles up the Chowan River to rescue an army gunboat, *Bombshell*, which had become pinned behind a Confederate battery. While firing on the enemy battery, *Southfield*’s Parrott rifle burst and caused considerable damage to the carriage. The gunboats continued their bombardment until early evening, and then slowly drifted a mile downstream. Next morning, they resumed firing until *Bombshell* made her escape in the early afternoon and the three vessels returned to Plymouth.106

Back in Plymouth, French wrote that in addition to the ruined Parrott, *Southfield* also had a 9-inch gun in the forward battery damaged during the attack on Plymouth in December 1862 which would

...[render] our ram useless in an engagement with a vessel, as we should be obliged to run her the other end forward in order to use the three IX-inch guns that are in battery there. Permit me also to suggest that the guns, when replaced, be fitted to work on center pivot.107

With an incomplete battery, Flusser expressed concern over the vulnerable *Southfield* and her weakened condition, stating "She is badly shorn of her strength." On 1 April, *Southfield* received her two new guns, although without the requested pivot carriages.108 With the battery once again at full strength, and prospects of a rumored ironclad attack looming, Lee wrote to Welles about the situation in Plymouth,
Should this ram attack Plymouth, no doubt it will be vigorously fought by the *Miami* and *Southfield*, with what success will, in the absence of any ironclad or torpedo on our part, depend on its speed and plating.\textsuperscript{109}

Serious problems began to manifest themselves in the Plymouth area with news in late March of an ironclad nearing completion above Williamson in Hamilton. Reports from informers provided conflicting data about the ironclad’s sheathing. Estimate of thicknesses ranged from three inches to seventeen inches, and varying numbers of guns. Union attempts to deny the ironclad access to Plymouth included the sinking of six or seven hulks above the town.

Around early April information gathered from sources above Plymouth suggested that a large Confederate force was assembling near Hamilton. Union naval plans for combating the ironclad called for lashing *Southfield* and *Miami* together to tandemly fight the enemy vessel at close quarters, while *Whitehead* was to disable the enemy’s propeller. Lashing together two vessels may have been patterned after David Farragut’s successful example of fastening a weaker vessel to a stronger one during the rush past New Orleans defenses in 1862. The Confederate plan called for 7,000 land forces to attack Plymouth, while the ironclad *Albemarle* engaged the Union squadron. Union defenses consisted of a cordon of earthworks guarded by 3,000 soldiers and four gunboats when Confederate land forces attacked Plymouth on 17 April.\textsuperscript{110}
The Confederate forces fired upon Fort Gray, upriver from Plymouth, on 17 April to begin the assault on the Union-held town. At dawn the next day, the southerners attempted to storm Fort Gray and failed. As the day progressed, fighting throughout the outer defenses reached a feverish pitch. Up until early evening, Southfield and Miami had remained tied together, with Southfield having fired over 200 rounds at the enemy. At 8:00 P.M. the two were cast apart. Southfield steamed upriver to protect the outer defenses while Miami remained off the town. By their effective shelling, the two gunboats managed to thwart three Confederate charges on the west side of the town. Later in the evening, the two gunboats anchored next to each other and prepared for the following day’s action.\(^{111}\)

At 12:30 A.M. the next morning, Whitehead brought information that the Confederate ironclad ram Albemarle was headed downriver. Crews of both Southfield and Miami hastily refastened the two together. Unlike the previous time when chains were used, hawsers were employed at each end of the boats. Southfield was positioned on the port side of Miami.

Albemarle, 152 feet long and 45 feet wide, armed with two rifled Brooke guns, appeared from the darkened left bank of the river around 3:30 A.M and aimed her iron-sheathed prow at the two Union gunboats. Miami and Southfield lurched ahead in an attempt to seize the initiative.
Albemarle, however, had the momentum, and glanced off the bow of Miami, and then smashed her prow into Southfield's starboard side at an oblique angle. French later wrote that the ram "... [struck] the Southfield on her starboard bow, her prow cut through the forward store room and into the fire room ... ."112

Following contact between the three antagonists, the two Union gunboats fired impotently upon the ironclad with their large guns and musketry. Albemarle could not immediately respond with her heavy bow gun because the ram had penetrated ten feet into the Southfield's hull. Water rushed into the ram's forward gun port as the sinking gunboat depressed the prow. Within an estimated time of ten to fifteen minutes the two vessels separated and Southfield sank. Those crew members and officers fortunate enough to escape the mortally wounded vessel jumped to Miami, while others made it to one of the two launches and were subsequently picked up by Whitehead. Both headed downstream to Albemarle Sound for safety. Forty-eight unfortunate crew members were captured and eventually sent to Andersonville for internment.113

Albemarle's successful foray into the Union gunboats exposed the weakness of the Plymouth earthwork defenses. Without the gunboats covering the river flank, the earthworks were exposed to an enfilading fire by the two Confederate vessels, Albemarle and Cotton Planter.
Union forces surrendered the next day with 2,500 men and numerous supplies captured. Writing sometime after the events, Daniel Ammen, a Civil War naval officer, questioned Flusser’s strategy of battling the ironclad with his wooden gunboats, "The writer is at a loss to understand the "rationale" of lashing two vessels together, and then running bows on to a vessel of such construction as the Albemarle." Despite Southfield’s dramatic loss, the gunboat remained in the thoughts of Confederate and Union naval commanders as the war continued. Union fears arose over Confederate attempts to raise her and the heavy guns.

Southfield’s career paralleled many of the other converted gunboat’s, and regular navy vessels. Groundings, repairs, and battle damage were all regular occurrences in the riverine and estuarine theater. The modifications to make the gunboat a more effective tool of war were a result of those experiences. However, no amount of alterations could protect the wooden vessel from a ram designed to sink her. The major flaw in the Union strategy was using wood against iron. Aside from that, Southfield and the other ex-merchant vessels performed their duties ably and effectively.
ENDNOTES CHAPTER 3

1 Southfield file, Eldridge Collection, Mariner's Museum, Newport News, Virginia; Permanent Enrollment 78: Southfield, Custom House Copy-New York Steam Enrollments, Volume 14, BMIN, Record Group 41, National Archives; Enrollment 78-Southfield, Record Group 45, AY-Purchases of Merchants-United States Navy, Box 128, National Archives; In 1866 the average gross tonnage of a ferryboat was 463.8 making the Southfield a very large boat during this time period. Not until 1919 would ferryboat average gross tonnage at 892.7 surpass the Southfield. Cudahy, Over and Back, 344.

2 New York Times, 1 September 1857; Morgan to Fox, 13 December 1861, AY-Purchase of Merchants, Box 128, RG 45, NA.

3 No written documents consulted offered any explanation or details of building ferryboats with solid ends. A research question was addressed at discovering the configuration of the solid ends during the underwater survey, but due to the overburden was impossible.

4 Morgan to Fox, 13 December 1861, AY-Purchase of Merchants, Box 128, RG 45, NA; Southfield Enrollment, RG 45, NA; Southfield file, ZC Collection, Naval Historical, Washington, D.C., hereafter cited as NHC.

5 "The Famous Englis Shipyard," The Master, Mate, and Pilot (July 1911): 51.

6 Ibid., 50; Albion, The Rise of New York Port, 301.

7 "The Famous Englis Shipyard," 53; Englis file, South Street Seaport Archives, New York, New York.

8 New York Times, 1 September 1857.


10 New York Times, 26 June 1858; H. Wilson, compiler, Trow's New York City Directory (New York: John F. Trow, Publisher, 1858-61), 53.

11 Copy Petition of Staten Island Ferry Victims To The Commission Council Of The City Of New York Against Abuses And Oppression Of The Existing Grinding Ferry Monopoly (New York: John Ackerman, Printer, 1863), 14.

12 New York Times, 1 September 1857; 26 June 1858.


18 This suggestion is based upon Captain Behms complaints about the difficult handling of the vessel in a stiff sideward during the Burnside Expedition. Behm to Goldsborough, 10 February 1862, in John Rush, ed., Official Records of the Union and Confederate Navies In The War Of The Rebellion, 31 vols. (Washington: GPO, 1894-1914), ser. 1, vol. 6, 569-70.

19 Petition of Staten Island Ferry Victims, 9.

20 Petition of Staten Island Ferry Victims, 9; Cudahy, Over and Back, 98.


22 Morgan to Fox, 10 December 1861, NYHS.

23 The signing of the deed between the New York and Staten Island Ferry Company and the Navy Department took place on 16 December 1861. Morgan to Fox, 13 December 1861; Enrollment, Box 128, AY-Purchase of Merchant Vessels, USN, 1861-5, RG 45, NA.

24 Goldsborough to Fox, 4 January 1862, Fox Papers, NYHS.

25 Goldsborough to Fox, 29 December 1861, Thompson, Confidential Correspondence of Gustavus V. Fox, 226-228.

26 Goldsborough to Fox, 4 January 1861, Fox Papers, NYHS.

27 Minick, "Part I," 426-7

28 Goldsborough to Fox, 12 December 1861, Thompson, Confidential Correspondence of Gustavus V. Fox, 216.
29Goldsborough to Fox, 4 January 1861, Fox Papers, NYHS.

30Behm to Goldsborough, 10 February 1862, ORN, ser.1, vol.6, 569-70.

31S.P. Lee to Dahlgren, 20 September 1861, Box 1-Letterbooks, Letterbook to Navy Department from 4 September 1862 to 15 October 1862, S.P. Lee Collection, Manuscript Department, Library of Congress, hereafter all further citations to Library of Congress Manuscript Department, LCM.

32Inspectors timed a gun crew (an inexperienced one) on the time required to shift guns from one side of the ferryboat to another on board the Hunchback. Time required to transport 100-pounder Parrott forward from port to starboard, 3 minutes and 50 seconds; time of loading and shifting the breechings of a 9-inch gun, 3 minutes and 10 seconds. A further test, of the crew assembling to repel boarders, was also conducted and took, 45 seconds. The inspector commented that the times were adequate, but not exceptional. Report of an Inspection-Hunchback, 21 March 1865, RG 74-Records of the Bureau of Ordnance, Entry 95-Reports of Inspectors, 1855-65, Box 1 and 2, NA.

33Southfield entry, 20 April 1863, Statistical Data of Ships-ORN, ser. 1, vol. 1, 212.

34Decklog USS Hunchback, 6 January 1862; Decklog USS Commodore Perry, 10 January, 12 January 1862, National Archives Record Group 24-Records of the Bureau of Navy Personnel, NA.

35Goldsborough to Fox, 30 January 1862, Thompson, Confidential Correspondence of Gustavus V. Fox, 234.

36Charles Flusser to Fan [sister], 8 [9?] January 1862, Charles W. Flusser File, ZB Collection, NHC.

37Officer ranks requested for the gunboat included an acting master, acting assistant surgeon, three acting master’s mates. Goldsborough to Behm, Goldsborough to Vevers, et al, 9 January 1861, Entry 395, Subseries 45-Correspondence of L.M. Goldsborough, RG 45, NA. Officer muster roles: 31 December 1862-15 officers; 1 April 1863-14 officers; 18 June 1863-11 officers; 1 October 1863-15 officers and 1 pilot; 19 November 1863-12 officers on duty, 2 on leave and 1 pilot; 31 December 1863-15 officers and 1 pilot; 1 April 1864-15 officers and 1 pilot, Entry 96-List of Officers on Ships, Vol. "S" 1861-5, RG 45, NA. In an undated and loose letter, the officers of the Southfield
were broken into two divisions: 8 under Cabin and Wardroom, and 7 under Other Officers. [n.d.], Box 1-Letterbooks, Letterbook to Squadron from 15 October 1862 to 2 February 1863, S.P. Lee Collection, LCM.

38 Goldsborough to Martin, 8 January 1862, Entry 395, Subseries 45-Correspondence of L.M. Goldsborough, RG 45, NA.

39 Crew Muster rolls of the Southfield: 1 March 1862-70 men, including officers; [n.d.] May 1862-68 men, including officers; 1 June 1862-75 men, excluding officers; 1 November 1862-76 men, excluding officers; 31 December 1862-100 men, excluding officers; 1 April 1863-95 men, excluding officers; 30 June 1863-104 men, excluding officers; 1 October 1863-110 men, excluding officers; 31 December 1863-105 men, excluding officers; 31 March 1864-120 men, excluding officers, Muster Rolls of the Crew of the U.S. Steamer Southfield, RG 45, NA.


41 Morgan to Fox, 28 December, 30 December 1861; Goldsborough to Fox, 4 January 1862, Fox Papers, NYHS.


43 Brunt Notes, 18-20 January 1862, ORN, ser.1, vol.6, 585-90; Goldsborough to Welles, 23 January 1862, ORN, ser.1, vol.6, 526; Goldsborough to Fox, 23 January 1862, Thompson, Confidential Correspondence of Gustavus V. Fox, 231-3; Decklog USS Minnesota, 16 January 1862, RG 24, NA;

44 Goldsborough to Rowan, 18 January 1862, ORN, ser.1, vol.6, 523.

45 Goldsborough to Welles, 18 February 1862, ORN, ser.1, vol.6, 550-5.

46 Goldsborough to Fox, 23 January 1862, Thompson, Confidential Correspondence of Gustavus V. Fox, 231-3; Goldsborough to Rowan, 30 January 1862, ORN, ser.1, vol.6, 538; Goldsborough to Welles, 18 February 1862, ORN, ser.1, vol.6, 550-5.
Goldsborough to Welles, 18 February 1862, ORN, ser.1, vol.6, 550-5.

Behm to Goldsborough, 10 February 1862, ORN, ser.1, vol.6, 569-70.

Behm to Goldsborough, 10 February 1862, ORN, ser.1, vol.6, 569-70; Goldsborough to Welles, 18 February 1862, ORN, ser.1, vol.6, 550-5.


Behm to Goldsborough, 10 February 1862, ORN, ser. 1, vol. 6, 569-70; Goldsborough to Welles, 20 February 1862, Entry 395-Correspondence of Goldsborough, RG 45, NA.

Hoehling, Damn the Torpedoes, 30.

Trotter, The Coast, 100; Minick, "Part II", 209; Browning, "NABS," 120-2; McCook to Goldsborough, 20 March 1862, ORN, ser. 1, vol. 7, 110-12.

Daniel Ammen, The Navy in the Civil War: Atlantic Coast vol. II (New York: Charles Scribner's Sons, 1883), 192; Decklog USS Hetzel, 14 March 1862, RG 24, NA.

Behm to Goldsborough, 15 March 1862, ZB-Collections-Behm file, NHC.

Rowan to Behm, 7 April 1962, ORN, ser. 1, vol. 7, 208; Decklog USS Commodore Perry, 9 April 1862, RG 24, NA.

Goldsborough to Rowan, 9 April 1862, Entry 395, E-45, Correspondence of Goldsborough, RG 45, NA.

Browning, "NABS," 125-6; Decklog USS Commodore Perry, 19-20 April 1862, RG 24, NA.

Rowan to Goldsborough, 30 April 1862, ORN, ser. 1, vol. 7, 291.

Parrott to Goldsborough, 15 May 1862, File-Mountings, Carriages, and the Testing of Big Guns and their Parts, RG 45, NA; Goldsborough to Rowan, 21 May 1862, ORN, ser. 1, vol. 7, 406; Behm to Goldsborough, 19 May 1862, Behm file, ZB Collection, NHC.

62Decklog USS Commodore Perry, April 1862; Decklog USS Hunchback, 13 May 1862, RG 24, NA.


64Minick, "Part II," 310-1; Jeffers to Goldsborough, 4 June 1862, ORN, ser. 1, vol. 7, 451; Decklog USS Marantanza, and Decklog USS Wachusetts, June 1862, RG 24, NA.


69Minick, "Part III", 317-22; Decklog USS Marantanza, 30 June 1862, RG 45, NA.

70Rodgers to Goldsborough, 1 July, 4 July 1862, ORN, ser. 1, vol. 7, 534-6.


72Report of James River Flotilla, 13 July 1862, Letters Received to Secretary of Navy, MC 89, Roll 206, RG 45, NA; Fox to DuPont, 31 July 1862, Thompson, Confidential Correspondence of G.V. Fox, 141-3.

73Decklog USS Galena, 5 August 1862, RG 24, NA; Decklog USS Morse, 6 August 1862, RG 24, NA; Wilkes to Welles, 5 August 1862, ORN, ser. 1, vol. 7, 629-31; Rodgers to Goldsborough, 1 July 1862, ORN, ser. 1, vol. 7 534.

74Wheeler to Wilkes, 8 August 1862, Letters Received to Secretary of Navy, MC 89, Roll 206, RG 45, NA.
Ashby to Welles, Kennedy to Welles, 12 August 1862; Wheeler to Wilkes, Wilkes to Welles, 14 August 1862, Letters Received to Secretary of Navy, MC 89, Roll 206, RG 45, NA; Decklog USS Wachusettts, 23 August 1862, RG 24, NA.

Browning, "NABS," 60; Minick, "Part III," 327; Wilkes to Goldsborough, 31 August 1862, Goldsborough to Welles, 1 September 1862, ORN, ser. 1, vol. 7, 694.

Southfield’s battery consisted of one 100-pound Parrott rifle gun, three IX-inch Dahlgrens, and one 12-pounder smoothbore boat howitzer. Behm to Lee, 5 September 1862, Entry 62-Letters Received from Officers, RG 19, NA; Extract of Logbook of USS Minnesota, 5 September 1862, ORN, ser. 1, vol. 8, 3.

Lee to Behm, 29 October 1862, Letterbook to Squadron 15 October-2 February 1863, Lee Collection, LCM.

Dix to Lee, 28 October 1862, ORA, vol. 18, 443.

Lee to Davenport, 24 October 1862, ORN, ser. 1, vol. 8, 147.

Behm to Lee, 29 December 1862, Box 30-General Correspondence, Lee to Lenthall, 24 December 1862, Letterbook to Navy Department 18 October 1862-12 January 1863, Lee to Ludlow, 4 December 1862, Letterbook to Squadron 15 October 1862-2 February 1863, Lee Collection, LCM; Lee to Lenthall, 15 January 1863, Entry 62-Letters Received from Officers, National Archives Record Group 19-Records of the Bureau of Ships, NA.

Turner to Lee, 15 November 1862, ORN, ser. 1, vol. 8, 209; Lee to Totten, 4 November, 14 November 1862, Letterbook to Squadron 15 October 1862-2 February 1863, Lee to Totten, 21 February 1863, Letterbook to Squadron 2 February-14 April 1863, Lee Collection, LCM; Decklog USS Morse, 26 November 1862, RG 24, NA.

The gunboat did not receive the additional 100-pound Parrott rifle despite Lee’s promise. Instead, the gunboat was armed with the rifle in the forward bow station, while a 9-inch Dahlgren was located in the aft stern station.

Lee to Fox, 29 October 1862, Fox Papers, NHSC, NYHS; Murray to Lee, 15 December 1863, ORN, ser. 1, vol. 8, 311-3; Decklog USS Commodore Perry, RG 24, NA.
Decklog USS Valley City, 9-10 December 1862, RG 24, NA; Flusser to Lee, 10 December 1862, ORN, ser. 1, vol. 8, 275; Mizell to Potter, 10 December 1862, ORA, vol. 18, 48.

Behm to Flusser, 10 December 1862, ORN, ser. 1, vol. 8, 276.

Murray to Lee, 18 December 1862, Entry 395, E-56 Correspondence of Davenport, vol. 2, RG 45, NA.


Behm to Lee, 8 January 1863, ORN, ser. 1, vol. 8, 278-80.

Ibid.

Ibid.; Henry A. Phelon to Josephine, 20 December 1862, Southern Historical Collection, University of North Carolina Manuscript Department, University of North Carolina, Chapel Hill, North Carolina, hereafter cited as UNC; The Southfield escaped with only minor injuries as attested by the fate of the USS Mound City when a shell pierced its steam drum and caused 175 of the crew to be scalded to death or drown. Roberts, "Gunboats," 88.

Behm to Lee, 8 January 1863, ORN, ser. 1, vol. 8, 278-80; No records were located during research indicating that the gunboat was sheathed with iron, and most likely did not receive boiler iron due to its shortage in the sounds.

Lee to Flusser, 11 December 1862, Letterbook to Squadron 15 October 1862-2 February 1863, Lee Collection, LCM; Flusser to Davenport, 12 December 1862, ORN, ser. 1, vol. 8, 282; Flusser to Lee, 29 December 1862, ORN, ser. 1, vol. 8, 335.


Lee to Lenthall, 6 February, 18 March 1863, Entry 62, RG 19, NA; Lee to Welles, 21 February 1863, Letters Received to Secretary of Navy From Captains, MC-89, Roll 163, RG 45, NA.

Phelon to Josephine, 25 December 1862, Henry A. Phelon Papers, Southern Historical Collection, UNC-CH; Decklog USS Valley City, 28 December 1862, RG 24, NA; Murray to Lee, 1 January 1863, ORN, ser. 1, vol. 8, 395; Flusser to Lee, 5 January 1863, Letters Received to Secretary of Navy

97 Browning, "NABS," 147; Minick, "Part V," 78-9; Davenport to Flusser, 1 April 1863, Entry 395, E-56 Correspondence of Davenport, vol. III, RG 45, NA; Flusser to Davenport, 3 April 1863, ORN, ser. 1, vol. 8, 653-4.

98 Graves to Davenport, 7 April 1863, ORN, ser. 1, vol. 8, 689; Prince to Southard, 13 April 1863, ORA, vol. 18, 223; McCann to Davenport, 18 April 1863, ORN, ser. 1, vol. 8, 685; Davenport to Lee, 1 April 1863, ORN, ser. 1, vol. 8, 833-4; Decklog USS Whitehead, 16 April 1863, RG 24, NA; Behm to Lee, 20 April 1863, General Correspondence, Lee Collection, LCM.

99 Davenport to Flusser, 2 May 1863, Entry 395, E-56 Correspondence of H.K. Davenport, Vol. III, RG 45, NA; Flusser to Lee, 6 May, 7 May 1863, Box 31-General Correspondence, Lee Collection, LCM; Behm to Davenport, 6 May 1863, Box 716, XN-Naval Stores Afloat: Home Waters, 1860-70, RG 45, NA.

100 Decklog USS Hetzel, 12 May, 20 May 1863, Decklog USS Miami, 21 May 1863, RG 24, NA.


102 Behm to Lee, 21 June 1863, Box 31-General Correspondence, Lee Collection, LCM; Goff to Behm, 24 September 1863, Fleet Engineers, RG 45, NA; Garvin to Williamson, 14 October 1863, Fleet Engineers, RG 45, NA; Davenport to Flusser, 4 November 1863, ORN, vol. 9, ser. 1, 260.

103 Behm to Bureau of Medicine and Surgery, 3 October 1863, Box 3-Letterbook from 26 March to 7 December 1863, Lee Collection, LCM; Davenport to Flusser, 20 October 1863, Entry 396, E-56 Correspondence of H. K. Davenport, RG 45, NA; Decklog USS Whitehead, 24 November 1863, RG 24, NA.

104 French to Flusser, 28 November 1863, Specifications, Characteristics, and Plans for the Construction of Vessels, RG 45, NA.
105 Browning, "NABS," 153-5; Trotter, The Coast, 223-30; Davenport to Flusser, 2 February 1864, ORN, vol. 9, ser. 1, 455; Decklog USS Hetzel, 18 February 1864, RG 24, NA.

106 French to Flusser, 5 March 1864, Letters Received to Secretary of Navy from Squadron Commanders, MC 89, Roll 174, RG 45, NA; Barrett to Flusser, 4 March 1864, ORN, vol. 9, ser. 1, 517-8; Decklog USS Whitehead, 1-2 March 1864, RG 24, NA; During the brief engagement in the Chowan River the Southfield expended 73 shell and 5 shrapnel from the IX-inch Dahlgrens, 1 shot from the 100-pounder Parrott, and 1 shell from the 12-pounder howitzer for a total of 80 rounds, and 79 pounds of service powder. Newman to French, 4 March 1864, ORN, vol. 9, ser. 1, 518.

107 French to Flusser, 5 March 1864, ORN, vol. 9, ser. 1, 517.

108 Flusser to Lee, 16 March, 552; 18 March, 556; 30 March, 578, 6 April 1864, ORN, vol. 9, ser. 1, 578; Decklog USS Miami, 1 April 1864, RG 24, NA.

109 Lee to Welles, 15 April 1864, ORN, vol. 9, ser. 1, 630.


112 Welles to Lee, 23 April 1864, ORN, vol. 9, ser. 1, 640; Browning, "NABS," 155; Nichols to Father, 4 May 1864, "Fighting in North Carolina Waters," 80; Pursell to Lee, 21 April 1864, ORN, vol. 9, ser. 1, 645; French to Lee, 21 April 1864, ORN, vol. 9, ser. 1, 642; Butler to Fox, 19 April 1864, 21 April 1864, ORA, vol. 33, ser. 1, 278-9; Decklog USS Whitehead, 19 April 1864, RG 24, NA; After the battle, a crew member of the Miami, A.P. Dodge, in an unidentified and undated newspaper editorial reply stated
that the Southfield and Miami were at anchor when struck by the ram. C.W. Flusser File, ZB Collection, NHC.

113 French to Lee, 21 April 1864, ORN, vol. 9, ser. 1, 642; Report of Captain of Albemarle, 23 April 1864, RG 45, NA; Decklog USS Miami, 19 April 1864, RG 24, NA; Decklog USS Whitehead, 19 April 1864, RG 24, NA; Acting Master William Newman of the Southfield many years after the events had kept a list of those taken prisoner. At the time of the sinking Southfield had 14 officers and 114 men on board. One officer was absent and four or five crew members were at the hospital. There were no casualties during the action or in the evening before the ram’s appearance. After the sinking 7 officers and 48 men were captured, and six either drowned or shot while escaping from the gunboat. Of those captured 25 died in captivity at Andersonville by 19 October 1864. Newman to Soley, 15 May 1888, Subject File 1775-1910, RA 1861-1865, Box 573-Prisoner of War’s United States Navy, RG 45, NA.

114 Trotter, The Coast, 244, Peck to Butler, 25 April 1864, vol. 33, ser. 1, 293; Arsen, Atlantic Coast, 203.
CHAPTER 4

POST MORTEM

Following their decisive victory over the Union forces at Plymouth, the Confederates attempted to consolidate their newly-won hold over the northeastern region of North Carolina. On 27 April, Confederate land forces besieged Washington, North Carolina and three days later Union forces abandoned the city. In early May, Confederate forces advanced on New Bern, but were recalled to aid in efforts around Petersburg.\(^1\) Meanwhile, Union leaders feared the Confederates in Plymouth would raise Southfield for use with Albemarle to contest control of Albemarle Sound.

Two Union officers, General I. N. Palmer and Commander Melcanthon Smith, voiced their concerns over possible Confederate efforts to salvage the sunken Union gunboat. Palmer believed that both the army and navy should send an expedition up the river to thwart any Confederate ambitions concerning the vessel.\(^2\) Smith, senior officer of the naval contingent in Albemarle Sound, voiced the same sentiments to Lee, stating that Southfield’s raising and use with Albemarle would prove a serious threat to navy vessels in the sounds.\(^3\)

To monitor Confederate activity in Plymouth several reconnaissance missions were conducted in May to gather information regarding Southfield’s status. The scouts were also to report about Confederate positions at Plymouth, and
especially the location of Albemarle. A former acting ensign on board Southfield, John Peacock, volunteered for the first Union mission in early May. He managed to get within two hundred yards from Plymouth on the north shore of the Roanoke River to observe Confederate activities. Aside from reporting enemy positions, Peacock also reported not observing the smokestack of the gunboat and offered two explanations: that the smokestack had been taken to replace Albemarle's damaged one, or that Southfield had been raised. Commander Smith, on hearing the report, believed that the smokestack had been taken.⁴

Five days later a second Federal reconnaissance was sent to scout the Plymouth area and observers noted "... the "Southfield" is lying where she was sunk, the upper deck just awash and smokestack standing." Based on this information, Smith expressed his opinion that the intact gunboat could easily be raised, whether by the Confederates or Federals, he did not say.⁵

The Confederates in April and May, however, were more concerned in recovering Southfield's big guns than with raising the wreck. By 16 May, Albemarle's captain informed his superiors of the successful retrieval of two 9-inch Dahlgrens and one 100-pound Parrott.⁶ Union intelligence by late May reported that all the guns of the gunboat had been retrieved.⁷ In addition, the Confederates had
employed one of the gunboat’s launches as a ferry on the Chowan River.  

In late June, reports started to filter back to Union commanders in Albemarle Sound that Southfield had been refloated and was in the process of being outfitted by the Confederates. Another reconnaissance mission was dispatched immediately to confirm or disprove the rumors. Union scouts on 25 July, observed Southfield in the same condition as before, although the hurricane deck was about three feet higher out of the water. Additionally, the smokestack, lookout ladder, and forward pilot house were clearly visible, as were Confederate activities directed at raising the wreck.

Confederate salvage equipment consisted of an iron barge between 500 and 600 tons on the starboard side of the gunboat, while at the stern, a 150- to 200-ton schooner was situated on the port side. The scouts reported no signs of purchase rigging for lifting the vessel, but men were seen working on the barge and schooner. Additionally, Albemarle was seen lying next to a wharf at Plymouth. Confederate activity at the sunken gunboat escalated during the next few months.

A later Union reconnaissance near the end of August found the hurricane deck about 18 inches above the river, although it would have been more exposed if the river had not risen since the last mission. The Confederates had
shifted the barge and the schooner to the starboard quarter of *Southfield*, while four large timbers rested across the deck of the barge and on *Southfield*'s hurricane deck. On the port side, a large schooner was outfitted with shears on her after deck, attached to a heavy tackle, with the fall leading to the windlass. Men were working the windlass, but the scouts could not ascertain where the lower blocks were attached.¹²

More information about the Confederate venture to raise *Southfield* was obtained in early September by a contraband, William Reid, who had previously served on the gunboat as a first Class Boy. Reid had been captured along with eight other of the crew by the Confederates after her sinking. He stated the Confederates had been trying to raise the wreck for a month, and that two schooners and two barges were employed in the attempt. Several of the vessels had been outfitted with hydraulic screws to bring up the gunboat. Chains had been placed underneath *Southfield*, and efforts were begun on 1 September to start hoisting the gunboat up. Problems apparently arose for the Confederates as the vessels equipped with the hydraulic screws had sunk about two feet and could not lift the ex-ferryboat.¹³ Nevertheless, Confederate resolve to lift *Southfield* remained.

During mid-October, Union scouts reported *Southfield* still in the same position as before, but noted the absence
of the smokestack. The Confederate salvage vessels were located two on the forward end on each side, and two on the aft end on each side with timbers for raising the vessel. Even though arranged to continue efforts to refloat the gunboat, the scouts believed the Confederates had momentarily forsaken salvage attempts.\textsuperscript{14} Failing to raise the gunboat in several month’s time, the Confederates were denied the chance in late October.

On 27 October, Lieutenant William Cushing ascended the Roanoke River to destroy Albemarle. Cushing’s launch was specially equipped with a spar torpedo to destroy the ironclad. To reach the ram, Cushing had to avoid Confederate pickets stationed on Southfield, located about one mile below Plymouth. Cushing also had heard rumors that on one of the barges or schooners lying next to the gunboat, a cannon had been mounted to command the river bend leading into Plymouth. In any event, Cushing and his launches managed to elude Confederate lookouts posted on Southfield during the night of the twenty-seventh. As Cushing’s launch went for Albemarle, another launch drifted back to Southfield to capture four sentries and clear the way for a safe return voyage after the mission. The rumored cannon was not found on board any of the Confederate vessels.\textsuperscript{15} The successful destruction of the ram by Cushing allowed the Union forces to attempt to retake Plymouth.
On 31 October, Union naval and land forces recaptured the town of Plymouth from Confederate forces. To obstruct the river and impede the Union vessel’s advance on Plymouth, the Confederates had previously sunk two schooners on either end of Southfield. To avoid the obstruction, Union naval commanders decided to steam up the Middle River, rather than face the possibility of being denied passage by the obstructions. Without the aid of Albemarle, the Confederates were outflanked by the gunboats and forced to relinquish Plymouth back to Union forces.

After regaining Plymouth, Union military officials gave serious thought to raising Southfield and Albemarle. Some naval officers believed Southfield with her good engine could be raised, and that a contract for raising the gunboat should be issued. A private firm would have to do the work as the navy had no proper lifting equipment to raise Southfield or Albemarle. Southfield was never raised, while Albemarle was successfully refloated and brought to Norfolk. Union naval activity resumed on the Roanoke River until the end of the war to control Confederate movement along the river. Several more Union ship losses occurred during the waning days of the war due to torpedoes.

At the conclusion of the Civil War, many Union and Confederate wrecks littered the waterways of the southern states, rendering them hazardous to navigation. Nowhere was this more so than in the Roanoke River. USS Southfield,
Otsego, and Bazely, sunk by torpedoes in 1865, and several blockships hindered navigation in the lower regions of the river. In late 1870 and early 1871, Mr. George Elliot, working for the Corps of Engineers, conducted a survey of the Roanoke River to determine the extent of the obstructions. He reported that a Mr. Foote from Plymouth was removing some troublesome wrecks as stipulated in a contract with the Corps.¹⁹

The contract work was to cover the removal of impediments to navigation from the mouth of the river to Williamston.²⁰ Lying between three-quarters of a mile and a mile downstream of Plymouth, Southfield was resting in twenty-five feet of water. The derelict was not listed as a hazard to navigation, except at night and during fog, but Elliot recommended its removal along with snags, piles, the schooners sunk at Broad Creek, and a sunken battery at Gray's Fishery.²¹ In 1873, Chief of Engineers Craighill reported on the progress in removing obstructions in the river:

... there have been removed from the bed of the river, or broken up and spread over it so that the debris cannot obstruct navigation, one large steamer (Southfield) near Plymouth. ...²²

As a result of the successful salvage operation concerning Southfield's removal or break-up, the gunboat disappeared from the records in 1873. The exact location of the gunboat was uncertain until she was relocated in 1990.
During a remote sensing survey to identify submerged cultural resources at a proposed construction site of a dock, Tidewater Atlantic Research (TAR) of Washington, North Carolina pinpointed Southfield’s location once again. A side-scan sonar image depicted a wrecked vessel intertwined with debris and logs, while ground-truthing identified the vessel as Southfield.

The discovery of the gunboat coincided with efforts undertaken by the North Carolina Department of Archives and History, Underwater Archaeology Branch (UAB), to document Civil War remains in the Roanoke River. State underwater archaeologists were examining the blockships at Broad Creek, and USS Otsego and Bazely to assess the scope and extent of the archaeological cultural material at each site. A dive was also made on Southfield after her rediscovery was reported by TAR.

The reason behind the efforts of the UAB to determine the extent of Civil War cultural material in the river was to develop a proposal requesting that shipwrecks in northeastern North Carolina waters be designated as a special shipwreck district on the National Register of Historic Places. To document the wrecks, a comprehensive underwater survey was proposed on the blockships and USS Southfield. To realize this goal, the UAB invited East Carolina University’s Program in Maritime History and Underwater Research to join the effort. Consequently, in
the summer of July 1991, a large scale underwater survey commenced on the selected wrecks in the Roanoke River. East Carolina University students and staff documented *Southfield*, while the state underwater archaeologists recorded the blockships at Broad Creek.
ENDNOTES CHAPTER 5

1Trotter, The Coast, 249-52.

2Palmer to Shaffer, 23 April 1864, ORA, ser. 1, vol. 33, 960.

3Smith to Lee, 7 May 1864, ORN, ser. 1, vol. 10, 32.

4Smith to Lee, 12 May 1864, ORN, ser. 1, vol. 10, 49.

5Smith to Lee, 20 May 1864, ORN, ser. 1, vol. 10, 73.

6These guns most probably came from the forward battery of Southfield, as the 100-pound rifle was located there. Cooke to Brooke, 16 May 1864, ORN, ser. 1, vol.10, 640.

7Smith to Lee, 24 May 1864, ORN, ser. 1, vol. 10, 86.

8Smith to Lee, 1 June 1864, ORN, ser. 1, vol.9, 763.


11Ibid., 306.


14Woodman to Josselyn, 7 October 1864, ORN, ser. 1, vol. 10, 571.

15Macomb to Porter, 29 October 1864; Cushing to Porter, 30 October 1864; Gay to Welles, 7 May 1865, ORN, ser. 1, vol. 10, 611-4.

16Macomb to Porter, 1 November 1861, ORN, ser. 1, vol. 11, 12; Minick, "Part II," 84.

17Macomb to Porter, 6 November 1864; Porter to Welles, 14 November 1864; Macomb to Porter, 25 November 1864, ORN, ser. 1, vol. 11, 64-5, 96.


21In this report, Southfield is mistakenly reported as being 260 feet in length. Elliot to Craighill, 28 April 1872, *Annual Report of the Chief of Engineers-1872*, 28-30; Manning to Bontwell, 28 September 1870; [?] to Bontwell, 25 September 1870, Jim Pleasants Archives, Underwater Archaeology Branch, North Carolina Department of History and Archives, Kure Beach, North Carolina.

22*Annual Report of Chief of Engineers-1873*, 76.
CHAPTER 5

FIELD INVESTIGATIONS

Description of Fieldwork

In 1990 Tidewater Atlantic Research (TAR), a private contract archaeological firm, located the remains of USS Southfield during a remote sensing survey project in the Roanoke River near Plymouth, North Carolina. The discovery and identification of the wreck sparked an immediate interest in the North Carolina Archives and History Underwater Archaeology Branch (UAB), and among townspeople of Plymouth. In a cooperative venture with UAB and the town of Plymouth, East Carolina University’s Program in Maritime History and Underwater Research conducted a field school on the wreck in July 1991.

Surviving structural remains of USS Southfield were located three quarters of a mile downriver from Plymouth, North Carolina (Figure 5.1). When compared to historical maps of the Civil War and to maps of the 1870s, the present position of USS Southfield corresponded favorably. Side scan sonar data and information from a diving reconnaissance obtained at the site from TAR confirmed a large amount of exposed wreckage. The sonogram records depicted the wreck protruding from the river bottom. A scour along the downriver side of the wreck extended from the fantail to a point forward of the paddlewheel box. Features revealed in the acoustic image and during the visual investigation
FIGURE 5.1. PROJECT LOCATION MAP.
helped to identify the remains as the gunboat USS *Southfield*. Prominent discernible images included the forward or aft section of the vessel, gun bulwarks, and length that corresponded generally with the dimensions of the sunken gunboat that could be gleaned from historical accounts and photographs (Figure 5.2).

Before actual fieldwork commenced in July, an advance team comprised of a staff archaeologist, two graduate assistants from PMHUR, an ECU dive safety officer, and four members of UAB dove the site in early June. Visibility ranged from six to eight inches aided with a light, and silt on exposed wreckage was minimal. Information gained from preliminary dives aided in judging the environmental conditions to be expected, and also influenced the planning of recording methods during the field school.

Fieldwork commenced on 10 July and continued until 3 August 1991. After the wreck was relocated, a marker buoy was placed on the site. The buoy allowed for quick anchoring, and served as a guideline to the wreck. Conditions encountered on the site in early June had deteriorated by the first day of field activity. Visibility had been reduced to about an inch with a light, and areas earlier free of silt contained several inches of sediment. In general, environmental conditions experienced during field operations consisted of brief thunderstorms, regulated currents from upstream hydroelectric plants, improving
FIGURE 5.2. SOUTHFIELD SONOGRAM.
visibility to a foot or more with lights, and water
temperatures in the eighties.

Field school personnel consisted of a project director,
one staff archaeologist, two graduate assistants, two dive
safety officers, and five graduate students. Equipment
employed for the archaeological investigation included two
workboats: a twenty-four foot boat, a ten-foot boat and a
scow, induction dredge pump, land survey instruments, SCUBA,
HOOKAH breathing system equipped with surface-to-diver
communications, and underwater mapping tools. Important
logistical support was provided by the town of Plymouth, the
Port O’Plymouth Roanoke River Museum, and Weyerhaeuser
Corporation.

Preliminary dives during the first two days of field
school allowed staff and students to familiarize themselves
with the wreck. In addition, these dives allowed the dive
safety officers to remove a nylon fish net that had been
entangled in the wreckage. Information generated by the
reconnaissance confirmed that about seventy-five feet of
exposed wreckage existed before the section disappeared
underneath the sandy river bottom. Logs, plastic sheeting,
mud, silt, leaves, and other overburden littered the surface
of the wreck. A large and deep scour along the downriver,
or eastern side of the hull and fantail of the wreck allowed
access underneath the sponson (Figure 5.3).
FIGURE 5.3. LOCATION OF SOUTHFIELD IN RIVER.
Following preliminary dives, an eighty-foot baseline of polypropylene was established running from the fantail to a point about twenty feet beyond the last observable traces of wreckage. A nail in a log beyond the fantail and a stake in the river bottom held the baseline in place. Plastic tags segmented the baseline into ten foot increments. Six crosslines, marked by plastic tags every five feet, traversed the baseline at varying angles from eighty to fifty degrees. The crosslines were also divided by the baseline at varying lengths. Two of the crosslines were twenty-five feet long, while the other four were fifty feet long. The two short ones were placed over the fantail and the four longer ones forward along the expanding breadth of the gunboat. Stakes in the sand on the upriver side and nails on the outside rubrail of the gunboat firmly anchored the crosslines (Figure 5.4).

Divers then determined the relationship of baseline to crossline. The first method consisted of using buoys attached to the ends of each crossline and baseline. Then a land survey team, using a theodolite equipped with an EDM (Electronic Measuring Device), tied the buoys to a datum point on land. This method, however, proved unsatisfactory, since currents caused the buoys and a swimmer holding an EDM mirror to move about constantly, resulting in faulty readings. Plotting the readings on graph paper revealed distortion when checked against underwater measurements of
FIGURE 5.4. MAPPING GRIDS.
the same crossline-baseline arrangement. After several attempts to correct the problems associated with the method another solution was chosen.

The new system consisted of measuring the crossline traverses underwater with a team of three divers. One diver measured ten feet from the baseline to one side of a crossline. A second diver measured from the point where the crossline spanned the baseline to a point ten feet up the baseline. A third diver held the two tape ends at the baseline. Next, a third tape strung to each of the ten-foot points provided a measurement to determine the angle. After triangulating one side of the crossline, the process was repeated on the other side. Measuring operations determined each of the six crosslines intersections.

Additional measurements were taken to pinpoint the crossline-baseline pattern further. This included measuring the distance from baseline 0 feet to a crossline traverse over the baseline. Also measurements were taken to determine the length from crossline 0 to the baseline, and from the baseline to the end of the crossline terminating at the east side of the wreck. Plotting these measurements accurately defined the position of each of the crosslines so that drafting of the site plan could begin.

Surveying of land stations around the wreck’s location commenced simultaneously with baseline and crossline installation. A land team first established a datum tied
into a permanent land marker located near a water pump station. Then using the primary datum, the team directed the ten-foot boat to various points along the north shoreline by the theodolite and EDM. Survey stations along the riverbank were planned with a spacing of every fifty feet, and to cover 300 feet in either direction of the wreck's position. Hampered by large overhanging trees and a poorly defined shoreline, the boat crew, however, varied the distance between stations as the foliage and terrain permitted. Upon completion of the north shore, the land crew then surveyed the south shore of the river. Later, the wreck's position in the river was tied to the land datum by buoys secured to the ends of the baseline (See Figure 5.3).

Dredging to remove overburden on the wreck began shortly after placement of the baseline and crosslines. Divers cleared the main deck by removing concentrations of mud, silt, leaves, and other debris. A nylon mesh bag, secured to the end of the dredge's exhaust tube, prevented accidental artifact loss during dredging operations. When full, the bags were recovered and several persons sifted through the bag on board the twenty-four-foot boat to retrieve any artifacts. After clearing the gundeck, dredging operations were focused along the fantail and downriver decks. Debris-free decks revealed features earlier obscured by the overburden. Dredging was also carried out at the rudder to facilitate in determining its
design and condition.

After clearing the deck and rudder, a hatchway located aft of the machinery enclosure was excavated to assess artifact preservation inside the hull. Carefully easing down into the hatchway, excavators started to come upon an artifact laden matrix. Excavation immediately ceased as a basic sense of the hold’s potential was apparent.

Mapping the interior gundeck area commenced once it had been cleared of debris. The baseline and crossline system separated the wreck into small and easily manageable mapping grids. In these small sections, mappers equipped with a mylar-covered slate and a tape noted construction patterns and details of the gunboat, triangulated artifacts, and made observations of their surroundings. By this manner all the sections and structures were drawn for later use in generating the overall site map of the wreck.

At the completion of archaeological work, baselines and crosslines were removed from the wreck. Final plans for the last day of field activity called for backfilling in areas disturbed by excavations. These plans were scrubbed as a result of the last day’s poor visibility, which prevented accomplishing the task. Disturbances of the overburden made during field activities were believed to be refilled by the dynamic river environment in a short amount of time. A subsequent dive on the site in November confirmed the natural backfilling of the site, thus
reinforcing the assumption that nature would do the job.

**Description of Findings**

Surveying of the site determined that the axis of the wreck lay on a thirty degree angle upriver from the south shoreline, or in a northwest to southeast direction. Exposed wreckage extended to a point within sixty feet of the north shore and to approximately 390 feet from the south shore. Buried structure apparent in the sonogram record indicates the wreckage extends much closer than that to the south shore. The extant fantail section of the wreck was located near the north side of the river. Sand covered mounds of disarticulated wreckage, several frame tops, and a metal cable lay slightly downstream of the fantail. The wreck was exposed from the fantail to the end of deck for 75 feet, with no visible deck features beyond this point. At its widest point the beam was 50 feet. Depths to the deck ranged from seventeen to nineteen feet, and to the bottom of the scour about twenty-five feet deep (Figure 5.5).

Overburden at the wrecksite consisted primarily of heavy coarse yellow sand. Swept by the current, the section of the wreck lying in the river channel was covered by this heavy yellow sand. Currents kept lighter sediments and silt from accumulating in this vicinity of the site. In addition to the predominant heavy sand overburden, light yellow silt and heavy dark sediments covered other parts of the site.
Sunken cut logs, most likely associated with the historically important logging industry along the Roanoke River corridor, also covered the site in places. Additionally, smaller debris composed of tree branches, twigs, leaves, seeds, and peanut shells were present. Modern debris intrusive to the site included several beer cans, plastic trash bags, plastic sheeting, and a large amount of snagged fishing net.

The arrangement and depth of sediments, and other overburden on the site depended on the river current, and on the proximity of protruding deck features. Along the west side of the hull, compacted sand caused the wreck to be level with the river bottom. Sand and mud on the west deck increased in depth as a consequence of logs piled next to the upriver gun bulwark. Sediment depths decreased from this location forward to the lower bulwark.

Inside the gun bulwarks, cut logs lying next to the athwartship bulwark trapped a deep layer of dark mud sediments and organic materials. Interior deck planks were obscured by the overfill alongside the athwart and upriver bulwarks. However, near the downriver, or east bulwark, the deck remained free of heavy sediment. The gundeck nearest the bulwark most likely stayed free of heavy sediments due to the current’s continual cleaning of this side of the deck. One log was also wedged against the inner downstream gun bulwark, trapping some sediments.
Lying outside the downriver gun bulwark were a few logs and branches on the sponsons trapping light sediments between them. At the fantail, overburden consisted of a heavy mud sediment and logs which obscured deck features. Sediment cover at the open forward deck spaces near the river channel was light. Once the overburden had been dredged, deck features once obscured and ill-defined were easily located and mapped.

Investigations revealed the presence of deck features related to the armament, launches, and mechanical sections of the gunboat. Gun bulwarks, hatch coamings, bitts, metal hawse pieces, engine room structure, rail stanchions, fairleads, and a boat davit assembly provided relief to the otherwise open deck spaces. No identifiable or articulated superstructure associated with the gunboat was discovered. The investigation also noted the apparent destruction caused by the 1870s clearing of the southern end of the exposed deck.

The following description of the exposed wreckage, for purposes of clarity, is divided between those features left in their original state and those associated with the conversion. Original structure includes the machinery enclosure, paddlewheel boxes, railings, sponsons, rudder access hatch, rudder, fantail decking and outer guard planking, small deck features, and hatchway. The conversion section discusses the gun log-works, launch assembly,
gundeck, sponson deck, mooring and anchoring system, and main cabin.

**Original Features**

**Machinery Enclosure**

Located about a foot forward of the hatchway were the remains of a horseshoe-shaped timber structure associated with the machinery space (Figure 5.6). The horseshoe timber was composed of two large timbers with several minor pieces attached to the foot of the timber and to the top acting as a molding or waterway. Beyond the timber’s end on the upriver side a 1 foot wide longitudinal component extended the structure to the damaged area of the vessel. The width of the machinery housing arrangement was 8 feet and 6 inches, while the length of the enclosure was denied due to the damages incurred during the 1870s clearing of the wreck. Lying beyond the large timber was an A-frame support truss with a turnbuckle at its end.

The port side longitudinal timber had disappeared. Ballast rock and other debris filled the space left by this particular timber’s absence. The void left by this timber allowed the viewing of the athwartship deck planking butting up against the outside of the timbers, while interior planking ran longitudinally underneath the wooden structure. Apparently the horseshoe piece rested on the longitudinal planking. Then athwartship planking had been placed over
FIGURE 5.6. MACHINERY ENCLOSURE.
the longitudinal ones by Union carpenters to raise the deck by 3 inches.

Each end of the horseshoe timber measured 1 foot and 1 inches in width and 6 inches in thickness. A wooden chock joined the two timbers together. Above the chock, a 3 inch diameter hole of indeterminate usage tapered to a smaller diameter at the bottom, which had been fashioned between the pieces. Two small sections of thin wood, nailed to the top of the timbers, surrounded the hole. An outline was all that remained of one of these pieces, while the other was still affixed in its original location. Exposed spikes, and some covered by plugs of 1 inch diameter, were interspersed throughout the timber to fasten the structure to the deck.

Along the base of the timbers was a 2 inch wide wood trim. The trim was shaped with a flat bottom with a slight curve running from top to the bottom. Attached to the top and exterior timber’s edges was a 2 inch wide strip of wood. The trim was separated at the butt joint by the thin wood pieces around the hole. Opposite each thin wood piece were two channels cut into the top strips of wood. In one channel, a wooden plug still remained in place, while the other side’s was missing. The purpose of the wooden channels remains unresolved, although they may have provided floor ventilation in the machinery space.

Paddlewheel Boxes Floor Planking
Downriver paddlewheel box flooring planks ran parallel to the vessel's outer guard. Widths varied from 3 and 4 inches. From the thickened athwartship plank aft to the ragged edges of the planks measured 14 feet and 4 inches in length. Several planks in the paddlewheel box were highly deteriorated. Twenty planks had been cut flush at the south end of the box. By the demarcation of the flush cut planks a tentative width of the paddlewheel was estimated to be 7 feet. The space between the last flush board to the log-curb was used by the ex-ferryboat's passengers to move to either cabin space located fore and aft of the paddlewheel.

Several single file rows of fasteners spaced about 2 feet and 4 inches to 2 feet and 9 inches apart constituted the fastening pattern. Occasionally a coak, used to prevent movement between planks, was placed in between two boards. All fasteners were plugged. Next to the gun bulwark, the paddlewheel box floor planking contained many gaps, filled with stone, sand, and small detritus. The outer guard of the vessel continued past the flush cut planks and then disappeared under the sand. Clustered around the outer guard, a deposit of rocks had settled next to the edge of vessel. In addition, disarticulated boards were found scattered around the space once occupied by the paddlewheel.

By hand-fanning it was possible to gather measurements of the upriver side paddlewheel box floor planks. They remained quite uniform in width of 3 inches. The fastening
pattern remained the same as the downriver side. All fasteners were capped and seams of the planks caulked. Planks were in a sound condition in this area.

**Railings**

 Probably the most out of place feature still remaining on the gunboat were the railing posts, although they had been lowered. The only explanation for their presence is the precipitate nature in which the conversion took place in early 1862. After the rails had been removed they might have been used for other purposes, as suggested by rings attached to some of the stanchions, possibly as tie-offs for the awnings. The first rail post was on the downriver side of the fantail. In the photograph of Southfield, this rail post is clearly visible. It lay parallel to the vessel’s edge and remains measured 2 feet and 6 inches in length and 7 inches in width. Height at its tallest end measured 1 foot and 7 inches. Two thin and severely corroded wrought-iron bolts extended several inches above the topmost part of the post. Present on each side of the rail stanchion’s highest peak were two iron rings of 7 inches diameter, possibly used to fasten the awning ropes. Beyond this post were three more rail stanchions where they terminated several feet before the launch assembly.

**Sponsons**
Construction of the guards or sponsons, the deck that overhung the hull, was discernable due to the deteriorated planking that allowed measurements of the support framing. Longitudinal beams resting on perpendicular beams supported the longitudinal planking, on which the transverse boards rested on top, of the outer deck. The perpendicular beams then extended outwards to support the curved planks of the outer guard. Those beams were periodically exposed along the outer guard and in the deteriorated area of the paddlewheel box floor. For the most part those particular beams were 4 inches in width. An iron rub rail of 1 foot and 3 inches wide encircled the outer guard timber to provide protection for the wood. Poor visibility and the accumulation of mud and debris prevented access to determine whether additional outriggers, or supports of the sponsons, had been added to strengthen the sponsons for naval duty. The historical record indicates that some ferryboats had received additional outriggers.

**Rudder Access Hatch**

Located about 3 feet and 8 inches from the edge of the vessel, the hatch’s dimensions were 5 feet in length and 1 foot and 9 inches in width. Timbers making up the rudder access hatch and deck plankings were highly deteriorated in several places, most notably in the after most region (Figure 5.7). A frame assembled of 2 inches wide wood
FIGURE 5.7. RUDDER ACCESS HATCH.
joined in a 45 degree angle set off the access hatch from the surrounding deck planks. This frame was highly deteriorated except at the forward most area. At each frame joint, one fastener was placed opposite the angle. Around the rudder head four large planks in two groups, upper and lower, enclosed the area. The upper ones consisted of two boards, about 10 inches in width, and were located forward and aft of the rudder. Each had three fasteners in them. Underneath, lower planks were about the same widths as the upper planks and were closely fitted around the rudder post.

Slightly located aft in the rudder access hatch, was the 10 inch diameter rudder head. The rudder head was capped by a metal square with 3 inch sides with a height of 2 inches. Another object, a flat metal piece extended sidewise from the rudderpost on the upriver side and joined to the inner rudder access hatch on the same side.

In conjunction with the rudder access hatch, the rudder lock-pin hole was located just aft of the hatch. By means of a pin, the rudder could be locked in position and then used as the bow. The metal plate measured 1 feet and 2 inches in width and 1 foot in length, with a hole diameter of 4 inches.

**Rudder**

Underneath in the scour, the rudder still hung in position (Figure 5.8). The rudder post extended just
slightly below the fantail and down into the river bottom. At the lowest excavated point, at about the three-foot draft mark, the width of the rudder was 3 feet and 6 inches. Raking away from the stern post the rudder at its widest measured approximately 4 feet. A space of 7 inches separated the lowest part of the fantail from the rudder. The rudder head came below deck in a round shape for approximately 7 inches. It retained its roundness at the aft end near the rudder post, but flared out in a squared shape to receive three pieces of timber of varying widths to form the rudder. They were fastened together by four visible drift pins.

At the stern post, made of white pine, *Pinus strobus*, had been shaped to almost allow the rudder post to fit into the stern post. Gudgeons and pintles were located in this hollow. This was ascertained by feel, since the closeness of the rudder to the stern post precluded visual inspection. It is probable that the through-bolts connecting the timbers together also served as the pintles. This type of stern post to rudder arrangement, called a streamline rudder, was also noted on the *Senora Nuestra de Regla/Commodore Hull/Waccamaw* resting in the mudbank of the Northeast Cape Fear in Wilmington, North Carolina. This vessel had been built by John Englis, the same builder of *Southfield*, in early 1861. Attached to the stern post were 7 inch long
lead draft marks, descending from eight to three feet at the
lowest point excavated.

At the eight-foot draft mark, copper sheathing in
excellent condition was exposed during excavation. A copper
band at this point wrapped around the topmost part of the
sheathing and the rudder. It was also evident that the hull
was also coppered after removing overburden at the rudder.
Copper sheathing had been placed over a tar-like substance
and some cloth. Coppered to the eight-foot draft mark
revealed that no additional sheathing had been placed on the
gunboat to account for the 9 and 1/2 foot draft brought
about by the increased weight of naval ordnance and stores.
It did, however, show that additional sheathing had been
added to account for its increase in draft while at Webb's
shipyard.

To lock the rudder in place and act as the bow, a
large piece of metal, wishbone in appearance, of 6 inch
width was fastened by bolts on both sides of the rudder.
The piece extended from the forward most part of the rudder
near the stern post and past the end of the rudder to the
lock pin hole. At the end was a cup-shaped object, 7 inches
high, with handles on either side. This was directly below
the metal plate on the deck which would allow a lock pin to
be inserted into the cup shaped feature in order to lock the
rudder in place.
Fantail Decking and Outer Guard Planking

Planking on the fantail ran in three different directions: athwartships, longitudinally, and along the curvature of the fantail. Athwartship planks varied in widths, ranging from 4 inches and 1 foot. Butt ends of the planks were double fastened, while interior fastenings alternated side to side every 1 feet and 6 inches. Butt end fastenings remained exposed, whereas the rest of the interior fastenings in the plank were plugged with a thin wood cover of white pine, *Pinus strobus*, and adhered to the fastening by white lead.

Longitudinal planks in the fantail deck section tapered from the aft most plank and gradually widened to the gun bulwark. Planking widths varied from 3 and 4 inches. Plank butt ends along the curvature of the fantail were fastened by one spike while the interior fastenings remained exposed. Holes, possibly from battle damage or water erosion, were interspersed throughout the downriver side planks.

Two large planks, an outer plank of 6 inches width and the inner of 4 inches width, conformed to the curvature of the fantail on either side. Those planks curved around the sponson aft to join with the extreme aftermost plank containing the rudder lock-pin plate. Outside of those planks was the wooden outer guard piece of one foot width.

In addition to the wooden deck planking, several iron
straps were situated along the outermost edge of the fantail. At the extreme aft of the vessel, a 7 inch wide metal band was attached to the curved edge of the fantail and gradually lessened in width forward to about 2 inches. From the tapered aft ends of the curved deck planks, ripples and iron stains marred the wood near the metal fairleads, indicating the past presence of a metal strap.

Planking along the curvature of the downriver outer guards began where the two large planks in the fantail region met with four planks along the outer guard. A prominent characteristic of these planks were their highly deteriorated state. Those planks occupied a 2 feet space extending from the edge of vessel to the athwartship planking. Widths were difficult to obtain due to the degraded nature of the wood, but seemed to generally range from 7 inches to 1 foot. Those planks were composed of white oak, *Quercus alba*.

As a result of the gaps between these planks, 2 inch diameter iron rods were discernible extending perpendicular to the edge of the vessel. Attached to the edge of the vessel’s rub rail, the rods terminated underneath the athwartship planks, and most likely were fastened from the outer guard to the sponson framing. All the rods were irregularly spaced, ranging from 1 foot and 4 inches to 3 feet. Planks above the rods were attached to the perpendicular beams. The iron rods merely supported the
planks. In the *Southfield* photograph, this area is clearly visible and acted as a bumper to protect the paddlewheel and the main cabin from damage in case of collision, and rubbing against the ferry slip.

**Small Deck Features**

The gunboat's deck remained relatively free of features from those already described. Along the downriver fantail section of the gunboat were several small deck fittings consisting of an iron ring, metal plates, and some concreted chain, possibly connected with the ground tackle. In addition, several metal collars connected to the steam machinery were located on various spots on the deck. The largest was north of the hatchway, while the smaller one was north of the paddlewheel box decking. Forward of the gundeck was a small ballast pile and hatchway.

Ballast on the *Southfield*’s deck was mostly on the downriver side of the centerline of the boat. Large and small cobbles were packed around the hatchway and along the framing timbers. Bits of broken glass, coal, metal, an iron boat hook, a cannonball, and other miscellaneous objects littered the spaces between the ballast. The presence of additional ballast seems odd considering the gunboat’s draft was already excessive, and its presence remains unresolved.

Surrounded on two sides by ballast was the hatchway. Length of the hatchway measured 3 feet and 1 inches in
length and 3 feet and 3 inches in width. Head ledges and hatch coamings rose 9 inches above the deck. Eight fasteners attached the hatchway head ledges and coamings to the deck. Inside the hatchway was a solid mass of sand and other small debris. The hatchway was probably the entrance into the shell room, or possibly into a storeroom. It is more likely the entrance into the ammunition room; during the attack on Southfield in December 1862, escaping steam prevented the crew from restocking the guns with ammunition. This hatchway is located just aft of the machinery enclosure where the steam drum was located.

Conversion Features

Gun Log-Works

The most prominent features of the gunboat were its gun log-works, or breechworks, which had been built up on the original log curbs of white oak, Quercus Alba, timbers. At the athwartship section, the breechwork was 11 feet in length. Each side log-work measured 43 feet in length. Two horizontal timbers, the lower on 1 foot and 6 inches in height and the upper one of 7 inches, composed the athwartship section to form a total height of 2 feet and 1 inch. In the middle of the athwartship gun bulwark, a 1 foot and 1 inch circular indentation in the deck was partially located underneath a 7 inch semi-circular hole in the log-works (Figure 5.9, A). The purpose of this
FIGURE 5.9. GUN LOG-WORKS.
configuration has not yet been determined; it may have been an area to sweep items onto the fantail and then overboard. Filling the junction of the longitudinal and athwartship bulwarks was the original ornamental post. The ornamental ball had been cut off flush with the height of the bulwarks.

Three timbers comprised the other breechworks. The bottom piece facing the gundeck sloped to form a waterway, and the three timbers combined to make a total height of 2 feet and 2 inches. Holding the timbers in place were through-bolts that were situated close to the sides of the gun works. Drift bolts were spaced anywhere from 4 inches to 1 feet and 5 inches apart, and alternated side to side. At two places along the longitudinal bulwarks were scarphs. They were double bolted on the aft end of the connection. Near a set of bollards, on the downriver sponson, was a piece of wood about a foot off the deck connected to the downriver log-works. The piece was attached undiscernibly to the bulwarks and was possibly carved from the middle timber. It may have acted as a step over the bulwarks. Beyond the built up section, the old log-curbs protruded to the southern end of the gunboat.

To connect the gun carriage tackle to the bulwarks, a series of wrought-iron breechings had been connected to the inner face of the timbers. There were seven sets of gun emplacements along the timbers. One at the atwhartship section, and three each on the upriver and downriver sides.
Each set was comprised of a wooden piece in the center. Flanking on either side were two iron breechings, with another one set underneath and parallel to the upper set, and an iron eyelet piece. On center from the wooden oval, the breeching system was separated from its neighbor by 14 feet.

The wooden pieces were half-ovals protruding out to protect the bulwark from the cannon recoil. Some of the pieces were in a very deteriorated state. Measurements were approximately uniform at about 2 feet and 7 inches long at the base. They protruded 6 inches, with some variance among pieces, from the gun bulwark out into the gundeck. Four iron pins connected the wood pieces to the timber.

Dimensions of the iron breechings were uniform for the most part. Length of the inner and outer breechings were 4 inches in width and 8 inches in length. Below and parallel to the inner and outer breechings was another set. Distance from center to center of each breeching was 6 inches. In one set was a 7 inch pin that was inserted in the holes of the outer breechings. The eyelets had a diameter of 4 inches, a stem width of 3 inches, and a total length of 5 inches. Metal washers and nuts on the opposite side fastened the individual breechings and eyelets to the log-works. Some of these were eye-shaped, square, round, and in one instance, a metal plate was used to connect one whole side of breechings. In addition, several metal rings
possibly associated with the breeching system were attached to the outside of the bulwarks, a pair at each southern end, and one each on the northern end.

Water erosion at each end of the bulwarks caused them to look rough and jagged. Besides this apparent deterioration, the gun log-works looked in excellent condition. On Hunchback, the bulwarks had repeatedly broken off the deck and were constantly under repair.⁵ Apparently Southfield's log-works had been attached with greater care. Curiously, the longitudinal and athwartship bulwarks were not lap jointed to provide extra strength and stability, but were essentially three distinct and separate walls. Urgency to finish the gunboat for the Burnside Expedition may have been the reason for this lack of concern for structural support.

One feature absent from Southfield, but apparently common on some of the ex-ferryboats, was a series of protective swing plates attached to the gun bulwarks. Commodore Perry had a set of fore and aft swing plates, made of half-inch thick boiler iron sheets, attached by hinges to the upper face of the gun bulwark. When cruising, the plates were in an up position to protect the crew from snipers, and during hostilities the plates were let down to clear the way for the guns.⁶ Traces of hinges or plates were not discovered suggesting that Southfield was equipped in this manner.
Launch Assembly

On the downriver sponson, or eastern side, remnants of a boat davit system for one of Southfield's launches were discernible (Figure 5.10). Beginning aft and working forward the launch assembly began with a cleat that lay parallel to the edge of the vessel. About 10 inches from the cleat towards and parallel to the edge of the vessel was a fairlead. In the interior of the piece, a 1 foot and 6 inch gap between the two ends allowed rope to pass through. Markings on the interior rounded ends indicated that, at one time, metal had been wrapped around them. Previously, the UAB had removed the curved bronze piece from the aft end of the fairlead (See Appendix B: Plate 1). Bronze allowed the rope to run smoothly over the interior ends of the fairlead without abrasion to the fibers.

Abutting the forward end of the fairlead was the davit. It was perpendicular to the edge of the gunboat with its tallest point, 3 feet above the deck, facing downriver. A distance of 10 feet and 6 inches separated those aft features from a similar arrangement further down the sponson. In between the two features were two parallel 2 inch wide metal straps. One terminated at the davits, while the other was located along the outerguard and were spaced 1 foot and 6 inches apart.

Between the davits was a set of metal bollards located on the athwartship deck planking 6 feet from the outer edge
FIGURE 5.10. LAUNCH ASSEMBLY.
of the gunboat. Each bollard had a diameter of 9 inches and was separated from each other on center by 1 feet and 10 inches. Planking, neatly cut around the bollard, allowed them to lay flush with the top of the bollard base. This indicated that the bollards may have been added at Webb's shipyard, and during planking repairs, rather than remove them, to cut the boards to fit around the base.

The davits' short lengths could be a result of several factors. The most likely was that, after moving the davits to alongside or on top of the cabin in late 1862, the original davit system was left partially intact due to the time necessary to remove them. Or it may be that the davits were never moved as Behm requested in September 1862. This particular davit system was not originally part of the ex-ferryboat because Behm proposed to shorten the cabins by twenty feet to add more guns. This would have meant the unlikely placement of the lifeboat inside the main cabin. More likely was that the lifeboat was outside of the cabin nearer the fantail or dragging behind the boat as in the photograph.

Gundeck

The gundeck was located between the gun bulwarks with planks running transversely, and in varying widths, from 4 inches to 1 foot. All butt ends were double fastened, while interior fastenlers alternated from side to side. A spacing
pattern of 1 foot and 6 inches separated the interior fasteners. Plank butt end fasteners were not plugged. Interior plank fasteners, however, had been plugged. Many of the caps had either disappeared from erosion or had been knocked out during the gunboat's lifetime. Lack of wooden plugs over a metal fastener exposed the adhesive compound of white lead. The gundeck remained free of deck obstructions except for one deck ring. A brass plate measuring 7 inches wide with a movable ring was attached to the deck by four fasteners at each corner.

Deck planking continued past the gun bulwarks and terminated where the vessel had been broken up in the 1870s at the southern end. Plank widths in this area were on average 8 inches wide and were fastened in the same manner as those on the gundeck. In this area at the end of articulated deck structure it was possible to discern that athwartship planking had been laid over lower longitudinal planks of between 2 and 7 inches in width. Beyond the end of the broken planks and some pipes rested on the river bottom. No apparent battle damages from shrapnel, canister or shot was visible on the deck planking. The extra planking, or sheathing, had been added perpendicular to the longitudinal bulwarks to facilitate recoil for the Marsilly carriages.

Sponson Deck
Outside the athwartship gun bulwark on the eastern sponson, transverse planking was added over the original planks. This was evident adjacent to the athwart breechwork. Those planks may have been added to complete repairs to this side of the sponson, rather than as planned alteration, because there was no need to strengthen this section for guns or the like. The boards were straight because it was most likely simpler and expedient to cut straight planks in New Bern than to make each conform to the curvature of the vessel. Athwartship planking started at the gun bulwark and extended to the longitudinal planking of the paddlewheel box floor where it terminated at a thicker board rising 1 inch above both the athwartship and paddlewheel box floor planks. Athwartship planking stretched from the gun bulwark to the outer sponson planking. These planks were Southern Pine, *Pinus spp.*, possibly obtained while at New Bern to repair the sponson deck. Plank widths varied from 4 and 10 inches. All planks were double fastened at each butt end, except one 10 inch plank that had three fasteners at either end. Interior to the butt ends all fasteners had remained unplugged.

**Mooring and Anchoring System**

Several metal features associated with ground tackle and mooring were located on the fantail. Two metal fairleads, opposite one another were situated about 8 inches
from the edge of the vessel. Each measured 3 feet in length, 1 foot in height, and 4 inches in width. Each end of the fairlead was attached to the deck by bolts. Their rounded shape allowed either the anchor chain or docklines to pass through. It is possible that these objects were original to the ex-ferryboat, as it is feasible that a wagon team could have passed unhindered through them and up the ramp. However, they are not discernible in the *Southfield* photograph.

**Main Cabin**

Only a trace of the main cabin was discernible as a combination of timbers located just aft of the hatchway (Figure 5.5). The location would not have been original, because it would have blocked the horse teams from that side of the gangway. This position must be a result of the modifications made to the gunboat in Norfolk. Stretching across the beam of the vessel to each bulwark, a long timber of 3 inch width and 21 feet in length separated the gundeck from the rest of the interior deck. A separate, or broken, 4 inch wide beam started where the other timber stopped and extended 2 inches into the gundeck and 9 feet and 10 inches onto the outer deck where the paddlewheel planks began. There was no similar timber on the downriver side protruding through the bulwark. Those timbers were probably the bottom
boards of the athwartship bulkhead to enclose the interior of the cabin.

Perpendicular to this timber was another timber 4 inches in width and 15 feet and 2 inches in length that terminated at the damaged section of the vessel. Affixed to the top of this piece by one fastener was another piece of wood 2 inches in width and 2 feet and 2 inches in length. The timber’s placement here may have enclosed a five foot space to make additional officer cabins after the saloon had been removed in September 1862. Lying in several places throughout the site were some disarticulated planks that may have been part of the superstructure.

**Artifacts**

Many artifacts were found throughout the wreck (See Appendix B for Artifact Plates). Overall, the most important artifact discovered in the stern area was the auxiliary rudder tiller. Comprised of both wood and metal, the tiller measured 6 feet and 9 inches in length. At one end, metal had been shaped to receive the metal square on top of the rudder post. From where the metal fastened to the wood, the wooden shaft narrowed in circumference to a pointed end (Plate 2).

Many artifacts were associated with the downriver side of the vessel outside the gun bulwark. Several loose metal objects were scattered throughout the deck. The function of
many were unidentifiable. Those included some horseshoe shaped, angled, and triangular metal pieces. Several, however, were readily identifiable as to purpose. An axe head was found on the deck near the launch assembly (Plate 3). Scattered along the deck were several unfired three-banded minie balls (Plate 4). Another metal object was a dog-lag used to attach lumber together when floating timber downriver. This object most likely was intrusive to the site.

Two composite artifacts of wood and metal were also found on the downriver sponson, a ship’s block and a long wooden pole with a metal rod attached to it (Plate 5). The ship’s block was located near the start of the gun bulwarks and might have possibly been part of the cannon breeching system, a spare relieving tackle for the steering ropes, or for the davits. The block could also have been used by the Confederates in their attempts to raise the gunboat. Forward of the ship’s block was a wooden pole of uncertain association with the wreck site. At one end of the wooden pole a 1 inch diameter hole had been drilled. Near the opposite end a long iron rod 4 feet and 3 inches in length and 1 inch wide had been attached to the wooden pole by a bolt. In addition to the metal and composite artifacts, an unbroken drinking glass was discovered in the sand inside of the paddlewheel box (Plate 6).

Aside from the tackle possibly associated with the
Confederates was the presence of a bayonet on the gunboat (Plate 7). The Austrian-type bayonet was of a kind primarily used by the Confederacy, although Union troops did use them obtained on captured from blockade runners. It is possible that the bayonet may have been used by a Confederate sentry.

Artifacts on the gundeck were scarce, while the area from the hatchway to the south end of the decking abounded in cultural material. In the interior of the engine space a lock, copper coil, chain, bar and other miscellaneous metal objects were discovered (Plate 4). One object, a metal bar of 1 feet and 3 inches in length, was shaped at one end like a spoon with an opening in the middle. A composite metal artifact of copper and iron was also found in this area. It measured 4 inches and at one end it looped around to form a circle, which was banded by copper.

Outside of the engine space timbers, several metal arch shaped objects littered the deck. Lying north and outside of the engine space was a large heavy cylindrical solid iron object encrusted in the ballast debris. The object measured 3 feet in length and 6 inches in diameter and may been related to operating the machinery. Further investigation around the object revealed the presence of a leather shoe with a pointed toe which had become encrusted in concretion connected with the metal object.
Excavations into the hatchway established that sand had built up in the opening and when excavators reached the bottom of the deck beam a shallow waterspace was discovered between the deck beam and the built up sand. Several artifacts were dredged up during the excavation, namely a shoe, loose leather, awl, anthracite coal, and clinkers, waste material from the boiler. The shoe was hob-toed with a heel, and the loose leather bits possibly came from the same shoe, or from another one (Plate 8). The awl at the handle was composed of wood, the working end of iron, and the handle and the shank connection was reinforced by a copper band (Plate 2).

Additional artifacts included iron fasteners (Plate 9), two sherds of an ironstone chamber pot (Plate 6), the boat hook and cannonball (Plate 10), and a brass frog for holding a knife sheath to a belt (Plate 4). In addition to the artifacts, many organic remains such as seeds, bark, leaves, and some small river clams, among other detritus were brought up during the dredging operations. All artifacts were conserved at ECU’s conservation laboratory and will eventually be put on display at the Port O’Plymouth Roanoke River Museum in Plymouth.

**Discussion of Findings**

The exposed remains of the gunboat provided an excellent opportunity to observe both the original and
conversion features of the ex-ferryboat. The most striking feature of the gunboat’s remains was the apparent haste in which the conversion took place. Thirteen days were spent transforming the ferryboat into a gunboat. By analyzing the extant features, it was discerned Union carpenters retained those features they considered useful, and in some cases only partially removed those that were not functional. This dichotomy can be readily observed in the gun log-works and the rails.

The gun log-works were built up on the log-curbs used to funnel the wagon teams off the ferryboat. Contoured in harmony with the overall ferryboat shape, the log-works were molded to conform to the curbs. The presence of the rail stanchions suggest that the carpenters merely cut them down so as to be out of the way of the guns. Evidence at the site also revealed the haste in which the conversion took place, without time even allocated to remove the stanchions completely, although they have used to provide convenient tie-offs in order to stretch the awnings over the gundeck.

Haste in both the alteration and repairs was readily discernible. That evidence included no connections between the athwart and longitudinal breechworks, retention of the ornamental posts and rails, straight planks along the sponson where fitted planks conforming to the ferryboat’s shape had been covered over. Anything that was still useful, such as the machinery enclosure and rudder access
hatch was left untouched.

At this time, identification of the exposed end of the hull cannot be made absolutely. While the gunboat was a double-ender, those in charge of the conversion believed one end handled better than the other. Thus they placed the 100-pound Parrott rifle at the "fighting end," or forward battery. On the basis of certain clues, it is likely that the extant remains are those of the aft end that contained the battery comprised solely of 9-inch Dahlgrens. First, the lock-pin was absent from the hole to secure the rudder, suggesting that this rudder was acting as the steering rudder, and not as the bow, in her last moments. Second, the presence of an auxiliary tiller at this end in case the steering tackle was disabled, although there might have been two auxiliary tillers on board. Third and most importantly, there was no visible sign of the catastrophic destruction sustained from the ironclad ram's attack. The ram reportedly plowed through a storeroom and into the boiler room. This damage would be visible if the extant wreckage was the bow. All of these clues point to the conclusion that this exposed section of the gunboat is the stern.

The side-scan sonar data suggests that more wreckage of the gunboat exists slightly below the sand. At a point upriver and away from the exposed deck some frame tops were identified to confirm this, but no other material sticking up from the river bottom was discovered. During the
clearing process in the Roanoke River in the 1870s, the contractor must have ripped apart the superstructure and engine frame, and removed the main deck forward of the surviving deck to expose the hold and frame tops. With the periodic flooding of the Roanoke River, the opened hold, like a can without its lid, was eventually filled in level with the sandy river channel. Most likely some damage and redistribution of material in the hold occurred during the clearing process. Those items still in the hold are probably protected by the overburden.

Combined with the historical records concerning the transformation process, the archaeological remains provide a tangible artifact associated with the Union's attempt to subdue the rebellious South with makeshift gunboats. Only a small part of those changes on the ex-ferryboat were evident in the remains. Other modifications, however, might be located with a more intensive underwater examination.
ENDNOTES CHAPTER 5


3Henry Russel, ed., *Principles of Naval Architecture* vol. 2 (New York: The Society of Naval Architects and Marine Engineers, 1942), 208; Piriah Case file, RG 21, NANJ.


5Garvin to Davenport, 25 May 1863, Box 31 General Correspondence, Lee Collection, LCM.


8Mitchell, personal communication, 1992; The repair facility at New Bern used wood from the surrounding area to make repairs to the gunboats, from which Southfield’s planking in this area possibly came. Browning, "NABS," 378.

CHAPTER 6

CONCLUSIONS

The decision to rely on existing merchant marine vessels by the Union navy during the Civil War was an expedient method by which to strengthen an ill-prepared fleet. Acquisition of an assortment of well-built civilian ships and boats permitted the navy to adapt a vessel to military service according to their specific qualities. Those vessel-types included schooners, riverboats, ocean liners, tugboats, and ferryboats that were rapidly converted into supply ships, transports, warships, and gunboats. Double-ender ferryboats, especially those from New York City, proved to be highly functional as either transports or gunboats.

By the time of the Civil War, New York City double-ender steam ferryboats had proven to be a reliable and dependable form of transportation over the Hudson and East rivers, and Upper Bay. From their conception by Robert Fulton and John Stevens in the early 1800s, the steady improvement in construction and durability of those types of ferryboats enabled them to meet the environmental and transportational challenges required of vessels on the New York routes. Hulls designed to withstand collisions with ice floes, engines built to provide speedy service practically independent of weather or water conditions, and spacious accommodations for passengers and wagons made them
attractive candidates for purchase and conversion into transports or gunboats.

Ingenuity on part of the Union naval constructors transformed ferryboats like Southfield, into gunboats in a very short time. The alteration process consisted of deciding which features were to be retained, which were to be removed, and of those aspects remaining, how best they could be adapted to support a combatant role. In the case of Southfield, examination of the sunken remains revealed that the log-curbs originally used to funnel wagon and carts provided a convenient base to build up the gun breastworks. Also the decks were altered by adding a sheathing of perpendicular planks over the original deck to make a suitable gundeck. In addition to strengthening the decks, the sheathing allowed the Marsilly carriages to recoil smoothly along the grain. Other original features, such as the machinery enclosure space, rail stanchions, and the log-curbs in the interior of the old runway apparently remained untouched by the naval constructor. All of those changes combined with the ferry's original features made Southfield one of the more powerful gunboats in the North Atlantic Blockading Squadron.

Fighting in North Carolina and Virginia, Southfield encountered diverse environmental conditions in estuarine and riverine operations. The gunboat, despite her increased draft, handled the shallow sounds of North Carolina well,
with only a few documented groundings like those experienced at Hatteras Inlet and in the tight bends of the James River. As George Morgan predicted, ex-ferryboats outfitted with heavy guns proved extremely formidable in attacking Confederate earthworks at Roanoke Island, New Bern, and Washington. However, in constricted riverine combat the gunboat was vulnerable to short, quick, and rapid artillery attacks as demonstrated on the James River and at Plymouth. Despite that particular problem, Southfield was a potent threat to land forces and weaker vessels. She was, however, no match for an ironclad ram. That catastrophic collision with Albemarle graphically illustrated the major weakness in using wooden boats against armored vessels and other modern advances in naval architecture.

Southfield performed well under the trying circumstances of war. Deterioration of the gunboat’s performance caused by the rigors of warfare was minimal. The gunboat was let into the fleet with no repairs to her boiler, like many other purchased vessels, which of course eventually needed repairs to correct. During the time spent building a new boiler, the gunboat was extensively modified to make her a better weapon. Subsequent repairs were made to the engines and to the decks, which frequently suffered battle damage and rot. Over the course of her career in the navy of over three years, the gunboat was only away from her station for approximately 107 days. She was as Morgan
stated a sturdy boat, and was well-constructed to endure the hardship of riverine and estuarine warfare.

In spite of their apparent flaws, wooden merchant crafts were crucial instruments that allowed the north to wage a successful naval war against the south. The ability to purchase or lease vessels from the merchant fleet enhanced Union efforts to blockade the Confederacy. Without this luxury of adapting civilian merchant vessels, the Union fleet would have taken much longer to develop. The navy could not have been adequately strengthened had the Union relied solely on a long and expensive vessel construction program. All along the southern coast, and western rivers, converted merchant craft contributed significantly to the naval force necessary to sweep the waters clear of Confederate vessels, albeit with an occasional southern victory.

_Southfield_ provided an excellent example of the Union policy of converting merchant craft into gunboats. By using the historical record, as well as the archaeological remains, to research this policy and its results, new light can be shed on the often ignored role of conscripted vessels in the Civil War. However, _Southfield_ still has much to offer in the way of knowledge about the Union navy during the Civil War, as well as New York ferryboat building practices in the 1850s and 1860s.

Evidence obtained from the exploratory excavation of
the hatchway confirmed the hold's previous structural layout was adapted to meet naval storage needs. A careful excavation of that area could reveal information associated with the personal effects, supplies, and ordnance stores that the USS Cairo could have provided in the 1960s. Current work on the army transport Maple Leaf by archaeologists will uncover and record a civilian riverboat converted into a military transport. Perhaps the two vessels' adaptation for military usage could be compared and contrasted beyond their apparent physical attributes as a transport or gunboat. Additionally, reported efforts to locate and document in Texas coastal waters another ex-Staten Island ferryboat fitted out as a gunboat, USS Clifton, would offer much in the way of comparative analysis with Southfield concerning adaptation to meet military needs.

As for New York ferryboat building, interior investigations could reveal unknown architectural components associated with those particular kind of boats. The information most tantalizing would be examination of the construction techniques used to protect Southfield's hull from ice floe collisions. Also, an intriguing comparative study of the two English built ferryboats Southfield and Nuestra Senora de Regla/Commodore Hull/Waccamaw could reveal similar, and differing, structural aspects. Of course, studying two Staten Island ferryboats could determine the
homogeneous or dissonant nature of ferryboats built to meet the environmental and transportational requirements of that route.

In conclusion, this thesis revealed much in the way of historical and archaeological data concerning the conversion of ferryboats into gunboats by the Union navy during the Civil War. By focusing on the career, and submerged remains of the ex-Statens Island ferryboat USS Southfield, important details about her alteration for military purposes have been brought to light. Additionally, little known information regarding New York City ferryboat building practices of the late 1850s that the Federal navy found so beneficial have also been uncovered. The thesis hopefully also illustrates the need to consider more fully the role and adaptation of those merchant vessels impressed to fight in the marine theater of the Civil War.
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APPENDIX A

Chronology of USS Southfield in the Civil War

1861:

December
13-Purchased by Morgan and sent to William H. Webb's shipyard for small fittings, coal, and other necessities.
16-Deed signed for gunboat between navy and New York and Staten Island Ferry Company.
18-Received identification number 356.
20-Ordered to proceed to Hampton Roads.
20/30-Undergoing re-coppering of hull.
30-Departed for Hampton Rds.

1862:

January
3-Arrived at Hampton Roads to join Burnside Expedition.
4/16-Conversion into gunboat.
 8-Receiving ship Roanoke detaches 55 men to gunboat.
 9-Behm ordered with 10 men from Braziliere to command gunboat.
11-Ordered to depart for Hatteras Inlet, with half a naval brigade, when ready.
16-Departed Hampton Rds. for Hatteras Inlet.
17-Arrived at Hatteras Inlet.
18-Aground on the "Swash," and slated to receive two launches and accouterments.
19-Armament: 1 100-pdr. Parrott rifle; 3 IX-inch Dahlgren smooth-bores.
20-Over the "Swash."
21-Received 27 shrapnel from Whitehead.
30-Fleet departs for Roanoke Island.

February
2-Received four 9-inch shot plugs from Hetzel.
3-Received 6 coal baskets from Hetzel, and delivered 24 hammocks to Commodore Perry.
7-Flagship of naval fleet during Battle of Roanoke Island. Fired on Confederate fleet in morning and early afternoon, and Fort Barton on Pork Point until sundown.
8-Fired on Fort Barton until ceasefire and remained anchor off Pork Pt. Received 96 yards of cartridge flannel from Stars and Stripes. Delivered 20 shell, 5 second fuzed, to Commodore Perry.
9-Carpenter gang fixing upperworks damaged during battle.
10-Assistant surgeon reports one death aboard gunboat during battle. Report on ordnance fired between 16 Jan.-8 February 1862: Parrott-8 shot, 98 shell, 96 cartridge; IX-inch guns-165 shell, 165 cartridge. Standing picket off Roanoke Island. Received from Stars and Stripes 6 blankets and 1 mattress.
11-Participated in destroying Confederate Fort Forrest on mainland across from Roanoke Island. Delivered captured grape, solid shot, and miscellaneous ammunition to Granite and Curlew.
18-Delivered 1 launch, armed and equipped, and 13 men to Hetzel.
23-Departed for Elizabeth City carrying mail with Ellis.
25-Anchored off Cobb’s Point on Pasquotank River. Circular reminding vessels, and especially gunboat, to guard against surprise attack and keep slip buoys on anchor chain.

March
1-Muster Roll: 70 crew on board.
7/8-Rendezvoused and delivered some men to Commodore Perry off North River. En route to Roanoke Island.
8-Arrived at Roanoke Island.
10-Ordered to proceed to Pamlico Sound, by way of Hatteras Inlet, to join combined operation to capture New Bern.
12-Departed from Hatteras Inlet for New Bern.
13-Opened fire on 4 gun battery near RR on Neuse River near New Bern and forced its abandonment. Anchored two miles below Fort Dixie, abreast Union land forces.
14-Ordered to bombard Fort Dixie and helped capture it. During battle collided with Hetzel.
17-Anchored off New Bern with Hunchback.

April
2-Off New Bern.
7-Ordered to rendezvous with Stars and Stripes in Albemarle Sound and then proceed to Elizabeth City.
9-Showed signals, “White, Red, Green,” while steaming up Pasquotank River. Anchored abreast to 4 other vessels.
11-Delivered two 4-1/2 gallons of oil to Stars and Stripes off North River.
13-Received from Stars and Stripes 11 bales of cotton near Elizabeth City.
19-Steamed upriver past Elizabeth City with 3 other vessels. Fired shrapnel at Confederate calvary and destroyed a bridge. Picked up Union troops and dropped them off to Picket.
20-Grounded above Elizabeth City, ungrounded with assistance from Commodore Perry. Towed back and
anchored slightly above city.

25-Received some crew and arms from Whitehead.

30-Off Elizabeth City in defensive cordon in fear of an ironclad sortie from Dismal Swamp Canal.

May

1-Muster Roll: 60 crew onboard.
2/6-Doctor of gunboat administering to sick at Elizabeth City.
3-Received coal, along with Shawsheen, from coal schooner Neptune for four hours.
6-Lacking appropriate gun crew numbers.
8-Departed downriver to mouth of Pasquotank R., passed Hunchback steaming to Chowan River.
12-Arrived at Elizabeth City in late evening. Parrott rifle worn. Needed new vents and cleaning.
13-Workmen repaired Parrott rifle. Received sick from Commodore Perry and then steamed downriver.
21-First request for gunboat and 3 others to proceed to Hampton Rds. and participate in McLlelan's Peninsula Campaign.
28-Ordered to Hampton Roads.

June

1-Muster Roll: 75 crew onboard, excluding officers.
2-Arrived in Norfolk around 5 PM and proceeded downriver at 6 PM to City Point.
3-Arrived with Delaware to City Pt.
6-Anchored off Turkey Island and then ordered to proceed to Fort Powhatan.
7-Off Fort Powhatan.
17-Anchored off City Pt. Between 12-4 PM next to provision schooner.
18/21-Pilot house being cased.
20-Ordered with Commodore Barney to proceed to York R. to protect army transports in the Pamunkey R. near White House, Virginia, or as directed by gen. McLlelan (Apparently these orders were not executed).
21-Arrived around 5 PM at City Pt. from Norfolk.
22-Received mail from Galena.
25-Loaded with various materials for Monitor and Port Royal. Proceeded downriver at 6 PM, delivered mail to Port Royal. Steamed upriver and delivered mail to Galena, and then anchored below City Pt. by 9 PM.
26-Anchored below City Pt., delivered sundries, ropes, sperm oil, hemp, etc. to Port Royal. In evening, left on expedition up Appomattox River.
28-Ordered back to City Pt. from Appomattox R. with Wachusetts, Delaware, Monitor.
29-On guard duty with Port Royal and Marantanza on James R. guarding army transports and supply schooners.
Steamed upriver from City Pt. at 4:30 PM to rendezvous with Galena off Churl’s Neck. At 6:30 PM steamed downriver, and returned with an army officer and attached to Galena off Turkey Pt. At 10 PM cast off from Galena and steamed downriver. Anchored off City Pt. at 11 PM.

30-Proceeded downriver from City Pt. at 4:30 AM. At 5:30 PM aground near City Pt., Marantanza attempted to assist to unground to no avail.

July

1-Ordered to Harrison’s Landing, but still aground below City Pt.
4-Opposite Windmill Point with Monitor and 2 other vessels at east end of Union encampment. Delivered anchor to Port Royal.
6-Becomes a part of the independent James River Flotilla.
10-Received 5 timer fuzes from Galena. Below City Pt.
12-Lobbed a few shot at Ft. Powhatan while steaming by.
13-Off Westover’s House, between Chickahominia River and Jamestown Island.
23-Sent launch over to Wachusetts, at 11:40 AM hoisted flag of Commodore Wilkes and then proceeded downriver. Passed Port Royal anchored off Ft. Powhatan.
24-Passed Marantanza at 6 AM while steaming to Ft. Monroe.
26-Passed by Port Royal anchored off Ft. Powhatan while carrying commodore’s flag, briefly stopped to receive mail from Port Royal. Later arrived at City Pt. with the commodore. Received 10 Berney shells, five 10-second fuses, and five 15-second fuses from Wachusetts.
30-Changed position around City Pt. several times.
    Notified to let an Union expedition by and assist if necessary.

August

2-Received 2 scaling ladders and 6 men from Wachusetts.
3-Grounded on sandbar off City Pt. after Confederate battery fired on gunboat. Responded with Galena to silence battery. 2 tugs arrive to assist gunboat. At 6:45 PM opened fire on battery, and enemy cleared out by 7:50 PM.
4-At 4 AM 3 tugs arrive to give assistance to unground. At 5 PM tugs begin to lighten gunboat.
5-Around 10 AM 3 tugs and 1 gunboat pulling vessel. At 3:30 PM. 2 more tugs arrive to pull. At 10:10 PM vessel ungrounded.
7-Ordered to proceed upstream from City Pt. as soon as possible.
8-Boiler inspected by chief engineers Petty and Wheeler, and reported in bad condition.
9-Ordered to lead expedition up Cobham Creek, and then proceed to Ft. Monroe for repairs.
10-Expedition called off, proceeded to Ft. Monroe. Draft reported as 9 ft.
12/15-Boiler getting patched.
16-Delivered to Commodore Morse 1 log book, 1 log slate, 1/2 ream letter paper, and 1 package official envelopes.
23-Received 1 man from Wachusett.
27-Anchored off City Pt. with Wachusett, Monitor, Sonoma, and Despatch.
28-Steamed upriver with Commodore Morse and tug Alert past Marantanza anchored off City Pt. at 10:30 AM. At 11 AM Marantanza heard heavy firing from their position. The three returned around 3:30 PM.
31-In need of extensive repairs to boilers. Again detached to North Atlantic Blockading Squadron.

September
5-Undergoing repair and alterations at Norfolk.
Battery: one 100-pdr. Parrott rifle; 3 IX-inch Dahlgren smooth-bores; one 12-pdr smooth-bore howitzer.
12-Requested to aid army's weak position at Yorktown, denied because in no condition to help. Due to fears of CSS Virginia II, ordered to guard harbor with Commodore Morse and tug Alert.
22-Transferred 100-pdr Parrott rifle to Minnestota.
23-Ordered to protect Norfolk, navy yard, and naval hospital, and prevent entrance and exit of unauthorized vessels from Norfolk and Elizabeth River.

October
1-Still under repair.
18-Muster Roll: 94 crewmen onboard.
24-Request for gunboat in sounds. Proposed battery consist of four IX-inch Dahlgren smooth-bore, and one or two 100-pdr Parrott rifles.
28-Battery listed as 4 IX-inch Dahlgren smooth-bores and two 100-pdr. Parrott rifles at each end.
30-Transferred one IX-inch Dahlgren smooth-bore and accoutrements to Miami.

November
1-Muster Roll: 76 crewman onboard, excluding officers.
6-Ordered after completion of repairs to proceed to Plymouth by way of Hatteras Inlet.
7-Lee authorized to add men to gunboat, but no petty officers.
9-Requires 1 acting master’s mate or ensign, and 2 acting 3rd assistant engineers able to operate sidewheel engine.

13-Lee requested New Ironsides to supply gunboat with original crew and personnel from Brandywine.

26-Sea trial downriver from army shipyard at Norfolk.

December

2-Departed for Sounds of North Carolina.

3/5-Arrived at Hatteras Inlet, stuck on "Swash," later got over.

7-Steamed up Roanoke River with numbers set.

9-Delivered 10 tons of coal to Valley City in afternoon.

10-Confederates attack Plymouth, and gunboat disabled by shot to steam drum. 8 shots struck gunboat.

12-Steam drum not yet patched.

17-Anchored off Plymouth.

23-Anchored above Commodore Perry off Plymouth.

25-Steamed downstream with Pautaxent at 10 AM, and returned at 6:14 PM.

28-Port guns trained on Plymouth along with Commodore Perry.

31-Proceeded on excursion up Chowan River with Commodore Perry and Underwriter. Muster Roll: 100 men on board, excluding officers. 2 desertions while at Norfolk.

1863:

January

4-Commodore Perry steamed downriver, gunboat took vacated anchorage, and Valley City took gunboat’s old one. At night trained guns on town.

9-Received coal from schooner J.A. Green.

11-Valley City retrieved dead man floating under its stern, found to be gunboat’s crewman drowned on 10 December 1862. Body turned over to gunboat.

12-Funeral services held onboard for crewman.

16-Circular received warning gunboat to keep vigilant against capture like Harriet Lane. Received pilot from Commodore Perry and then headed downstream at 6 AM for Elizabeth City. Scheduled to receive one IX-inch gun from Miami.

17-Returned to Plymouth at 9:30 AM.

18-Steamed downriver at 6 AM from Plymouth.

21-Reported in good condition. Commodore Perry anchored off Edenton discerns gunboat with its numbers set 3.5.6. Both steam to Plymouth and returned at 3 PM Anchored above Valley City, and Commodore Perry below Valley City.

23-Dropped below Commodore Perry anchored at Plymouth.

24-Departed for Roanoke Island at 7:30 AM from Plymouth.
26-Returned from Roanoke Island and anchored ahead of Commodore Perry.
27-Delivered 1 paper tacks and 1 keg of white lead to Commodore Perry.

February
2-Delivered 1 barrel of oil, 1 bale of hemp, 1/2 coil of marlin, 44 papers 18 oz. iron tacks, 6 papers 10 oz. tacks, and 1 paper copper tacks.
3-Off Plymouth.
4-Proceeded downriver.
5-Arrived back at Plymouth at 5 PM.
10-Arrived back from Edenton with 2 prisoners.
21-Received 10 barrels of bread from Whitehead.
25-Arrived back to Plymouth.

March
3-Off Plymouth.
5-Proceeded upriver at 10:30 AM, returned at 1:30 PM, then went downriver, returned to Plymouth at 2:30 PM.
12-Proceeded downriver at 7 AM, arrived back at Plymouth at 4 PM. At 7 PM started to fire over town.
13-Proceeded upriver at 10 AM, returned shortly afterwards, then steamed upriver to Thoroughfare near Cashie River, back to Plymouth at 10 PM.
17-Proceeded upriver and returned to Plymouth at 3:30 PM.
18-Delivered coal to Whitehead. During coaling operations Confederates fire on town at 1 PM, responded with Whitehead shooting at rear of town. Recommenced coaling at 5 PM.
19-Proceeded upriver at 10:40 AM, and returned to anchorage at 2:20 PM.
25-Delivered coal to Commodore Perry from 10 AM to 3:30 PM which then anchored below gunboat. Later delivered shell to Commodore Perry. Delivered coal to Whitehead from 4 PM to 6 PM.
26-Received coal from schooner Eagle along with Commodore Perry.

April
1-Muster Roll: 95 crewmen onboard, excluding officers. Ordered to proceed to Washington with Whitehead and Seymour in tow.
2-Received mail from Commodore Perry in Plymouth. Later hooked up with Whitehead off Roanoke Island at 11 PM, then proceeded to Pamlico Sound.
3-Arrived and ordered to engage Confederate battery at Hill's Point in the Pamlico River below Washington. In need of 100 of IX-inch Dahlgren rounds, 10-sec. fused; 60 of 100-pdr. Parrott shells, 10-sec. and 5-sec. fuses; 60 of 10-pound cartridges; 150 rounds for
24-pdr. Dahlgren howitzer; 1 barrel sperm oil.
Received last supplies while at Ft. Monroe.
4-Attached to Whitehead from 2 PM to 5:30 PM.
5-Bombarded Hill’s Pt. from 3,000 yards away with
Whitehead at 3:15 PM. At 6:30 PM moved closer to the
point, and resumed firing at 6:40 p.m.
6-Dropped downriver with Hunchback, Whitehead, and
Lockwood. At 9:30 PM group drifted downriver about 8
miles below Hill’s Pt.
7-At 3 PM. steamed with Hunchback, Seymour, Whitehead,
and bombarded Hill’s Pt. for 1/2 hour from distance of
2,800-3,000 yards. Anchored at 4:30 PM below Maul’s
Pt.
9-Proceeded upriver to scout river at 1:20 PM, fired at
Hill’s Pt., returned at 3:30 PM. Flotilla trying to
force ammo ships to Washington, but hampered by fog
and lack of pilots.
10-With Hunchback, Valley City, Whitehead, sloop Granite,
and army transports anchored a mile and a half below
Maul’s Pt.
12-At 5 AM left with other gunboats and army transports
to Hill’s Pt. Fired upon enemy battery from 3000
yards away. Ceased fire at 9 AM. At 1 PM departed
with Valley City 2 miles above Maul’s Pt, shelling at
woods on riverbank until 3 PM, and returned to
flotilla at 3:30 PM. At 8:40 PM steamed with
Hunchback, Whitehead, and Valley City while escorting
schooner and transport to force blockade. Fired upon
Hill’s Pt. received no response, and schooner Escort
successfully ran blockade.
13-Off Blount’s Creek and shelled woods around the area.
At 5:20 PM received from Hunchback: 50 charges of 10-
1b. powder for 100-pdr. Parrott rifle, and also 50
shells for same gun. Fired several shot at 8:30 PM
with Hunchback, Escort, Whitehead at Hill’s Pt.
battery.
14-Received signal officer onboard and steamed upriver at
2 PM to communicate by signals with troops in
Washington. Returned at 3:30 PM. At 5:30 PM went
upriver to Hill’s Pt. and anchored.
15-Needed 200 spelter rings for Parrott fuzes. Engaged
shelling around Blount’s Creek. Provided cover fire
for Escort’s exit from Washington.
16-At 9:30 AM departed with Whitehead to investigate
gunfire around Washington. Returned at 11 AM. At
12:10 PM proceeded upriver to fire at Hill’s Pt. with
Seymour, Whitehead, and Hunchback. Signal officer
reported onboard to communicate with troops in
Washington which informs that enemy retreating. At
2:30 PM with same vessels anchored off Rodman’s Pt.
shelling into woods and earthenworks. At 9:40 PM
steamed downriver.
17-In tow with a schooner enroute to Plymouth.
18-Departed from Roanoke Is. bound for Plymouth.
21-Received provisions from Commodore Perry. Off Plymouth.
22-Received 8 barrels and box of bread from Commodore Perry.
23-Anchored off Plymouth with Commodore Perry and Underwriter.
25-At 3:15 PM went downriver and returned at 3:50 PM with Valley City.
28-In company with Massoit helped unground Commodore Perry off sandbar below Plymouth.

May

2-In need of repairs to decks, and additional stores and ordnance.
4-Left downriver from Plymouth. Anchored at mouth of Roanoke River at 1:30 AM. At 6 AM returned to Plymouth and anchored by 9 AM.
7-While en route to Plymouth, came upon Whitehead in Albemarle Sound and received from the vessel contraband goods of 3 barrels of lard and some bacon. Also took onboard one prisoner, Mr. Parkins. Arrived in Plymouth with small steamer and schooner in tow.
8-Received some captured goods from Commodore Perry. Received 3-half inch coil of manila rope and 1 gallon of sperm oil from Miami. Ordered with contraband goods, prisoner, and for repairs to New Bern.
9-Left for New Bern. Went alongside Whitehead at 7 AM. at Roanoke Is. which delivered 6 boxes of tobacco on board.
10-Arrived at New Bern with 2 prisoners: 1 for abusing Unionists, the other a deserter from the 5th S.C. Regiment.
19-Steamed back to Plymouth.
21-At 3:30 PM came upriver and anchored off Plymouth.
22-Anchored below Plymouth.
30-At 9:15 AM went downriver to mouth of river and anchored. Returned to Plymouth at 4:55 PM and anchored below the town.

June

1-Anchored off Plymouth.
2-Departed downriver at 1:15 PM with schooner in tow. Returned at 3:55 PM and anchored below town.
16-Steamed downriver at 10:30 AM and returned to anchorage at 6 PM.
17-With Commodore Perry and Miami dropped downriver in the afternoon for a cruise to Chowan River.
18-At 1:40 AM Miami grounded off Colerain in Chowan
River. Signaled along with Commodore Perry to assist. Arrived at 2:10 AM and commenced tugging at Miami at 4:30 AM. Heaved the vessel off by 9 AM. Departed for Plymouth at 3:15 PM and returned to the town at 8 PM.

19-Blacksmith from gunboat fixing rudder on Valley City.

20-Anchored off Plymouth. Delivered 1 barrel of sperm oil, 1 barrel of neatsfoot oil, 1 coil of one and three-quarter inch rope to Miami.

30-Muster Roll: 104 men onboard, excluding officers.

July

5-Received 103rd and 101st Pennsylvania volunteers on board at 6:30 PM. Departed in company with Commodore Perry, Whitehead, and Valley City to Williamston.

6-At 7:30 AM passed Jamesville. Made fast to wharf at Williamston around 3:30 PM and bombarded enemy positions until 4 AM.

7-At 4:30 AM landed troops along with Commodore Perry into Williamston. Troops returned at 9 AM after brief capture of town. Arrived back at Plymouth at 2:15 PM.

8-Switched anchorage with Commodore Perry two miles below town at 5:30 AM. Summoned to assist Miami which had grounded at Louise Is. near mouth of Roanoke River. Arrived at 8:30 AM to assist, but could not budge the vessel, and returned to Plymouth. Steamed downriver at 12:30 PM with Commodore Perry and again could not unstick the gunboat. Began to lighten Miami with assistance from schooners. Received powder, while Commodore Perry took the shells. Returned to Plymouth at 9 PM to discharge ammunition.

9-With Commodore Perry and tug finally managed to pull Miami free at 5:30 PM. Arrived around 6:30 PM with other vessels. Went downriver between 8:30 and 9 PM, and returned at 11:30 PM with schooner in tow.

13-Several men from gunboat taken to New Bern for hospitalization.

18-Received 10 barrels of bread from Miami. At 11 AM alongside coal schooner. Received at 3 PM 1 box of coffee and 1 keg of butter from Miami. At 5 PM received from Miami 5 gallons of molasses. At 8:30 PM moved and anchored ahead of Miami.

23-Received from Miami 1 case of Sharps rifle ammunition to exchange at New Bern. In company of Valley City and Whitehead departed from Plymouth downriver. Towing schooner Deborah Jones.

24-Arrived at New Bern around 8 PM to get stores and supplies.

31-Still at New Bern.

August

10-At New Bern.
11-Engaged with Confederates under flag of truce near New Bern.
19-Departed New Bern for Plymouth with Delaware.
20-Hooked up with Miami at Hatters Inlet in the morning. Left at 11:30 AM for Plymouth.
22-Ordered not to let any vessels in or out of Plymouth.
23-At 9:30 AM signaled "Prepare to get underweigh."
   Whitehead came abreast gunboat, and both then steamed
   upriver and anchored at Hyman's Ferry. At 12:30 PM
   departed downriver back to Plymouth.
25-Departed with Whitehead to Elizabeth City with Col. Rucker and contingent of colored troops.
28-Anchored off Elizabeth City with Whitehead.
31-Aided in evacuating 1st U.S. Colored troops from Elizabeth City.

September
1-Arrived back at Plymouth from Elizabeth City.
6-Commodore Perry transferred to Miami 9 men ultimately destined for gunboat: 4 seamen, 2 ordinary seamen, 1 landsmen, and 2 first class boys.
8-Anchored off Hyman's Ferry.
9-Off Plymouth.
20-In need of zinc.
24-Acting 2nd assistant engineer reported engines were "out of whack" and in need of a thorough overhaul.
30-Off Plymouth.

October
1-Muster Roll: 110 men onboard, excluding officers.
4-Departed with Hetzel to Edenton and returned to Plymouth later in the day.
8-Ordered to Edenton to deter enemy conscription units. Returned with Underwriter around 8 PM to Plymouth.
14-Fleet engineer directed engineer of Delaware to examine gunboat's engines and correct the problems.
16-Arrived at Hatteras Inlet.
20-Gunboat in charge of executive officer Newman until Behm's return.
29-Departed with Delaware to New Bern.
31-Still at New Bern.

November
4-Getting engines re-lined at New Bern.
10-Left for Plymouth.
11-Aground in marshes around Roanoke Is. around 8 am.
12-Off Plymouth.
23-Received 2 contrabands- 1st class boys from Whitehead.
24-French assumed command of gunboat.
28-Condition of gunboat: Shell and magazine rooms in need of repair and unsafe. Rooms were situated 1 at
each end of vessel—neither were lined. Bulkheads and
tops were shrunk to allow light through. Only 12 or
15 feet from bulkhead to fireroom—no screen for
protection. In need of seasoned wood to make rectify
situation.
29—Late in day moved to anchor at lower station.

December
8—Miami while steaming upriver exchanged numbers with
gunboat and Hetzel at lower point in the river.
9—At 6:05 PM burned Caston light while off Plymouth. At
6:30 PM. Seymour came upriver and anchored.
10—At 6:30 PM burned a Caston light. At 7 PM Seymour
came upriver and anchored.
8/19—Town and gunboats at edge. Guns trained over the town
and men at the ready.
22—Around 2:20 PM finished coaling from schooner Belle,
and dropped down to lower anchorage.
31—Muster Roll: 105 men onboard, excluding officers.

1864:

January
6—At 5:55 PM lit Caston lights "red, white, red."
Seymour arrived at 6 PM.
8—At 5:54 PM lit Caston light. At 6:20 PM Seymour
arrived from upriver.
23—Steamed downriver at 11:25 AM Returned at 2:30 PM
with schooner in tow. Anchored at 2:50 PM.
28—Arrived back to Plymouth at 8:30 AM. Received 25 100-
pdr. rifle shell, 1 box of fuzes, and 1 cask of
mineral paint from Whitehead.
31—Went downriver at 6:50 AM.

February
2—Received a company of troops and left Plymouth at
10:20 AM. Returned at 7:30 PM with army steamers
Massasoit and Bombshell. Proceeded downriver at 11:30
PM with Whitehead to aid in relieving New Bern from
enemy.
3—Off Northwest Pt. at mouth of Neuse River on way to
New Bern.
4—Arrived at New Bern and anchored around 9-10 PM.
15—Off New Bern.
18—Steamed back to Plymouth from New Bern.
23—Came upriver and signaled by Miami to anchor in close
order.

March
1—Departed for Chowan River at 11:30 AM with Whitehead
to rescue army steamer Bombshell trapped 40 miles
upriver. Opened fire on enemy batteries with Whitehead. First shot causes Parrott to burst and break carriage. Gunboat draws 9 and a half feet. 2-Opened fire on same point and enemy abandoned position. Bombshell steamed downriver and vessels returned to Plymouth. Anchored at picket station at 10:30 PM.
4-Steamed downriver at 6:30 AM, and at 7:15 PM anchored at lower picket station.
5-In need of two guns to replace the damaged ones.
8-Received 6 crewman from destroyed Underwriter consisting of seamen, 2nd class fireman, coal heaver, and ordinary seamen.
9-Alongsie coal schooner Deborah Jones at 2 PM.
10-Dropped downriver to lower picket station at 9:15 AM.
16-Departed for Chowan River at 10:45 PM with Whitehead.
17-Anchored off Stumpy Pt. in Chowan River at 3:30 AM. At 6:30 AM steamed upriver for reconnaissance. Returned at 7:20 AM, and the went upriver to Holley’s Landing. Whitehead sent boat to get sand. Returned to Plymouth and arrived there around 12:15 PM.
22-Calympso carrying 2 guns for the gunboat will Beaufort, South Carolina weather permitting.
25-Went alongside wharf at 8 AM, then at 4:45 PM steamed down to lower picket station.
27-At 9:30 AM moored to Miami.
28-Guns arrived in New Bern but no transportation available to take them to Plymouth.
29-Guns shipped from New Bern.
30-Guns arrived in Plymouth.
31-Muster Roll: 120 crewmen aboard, excluding officers. At 5:30 AM unmoored from Miami and headed for wharf at 8:45 AM. At 5 PM refastened to Miami.

April
1-Fired 100-pdr. Parrott and IX-inch gun at 12:20 PM. At 1 PM steamed downriver alongside Miami. At 4 PM steamed back up to Plymouth.
2-Received 24 percussion shell for Parrott gun from Whitehead.
17-Enemy fires upon Ceres near Fort Gray above Plymouth. Surgeons from gunboat and Miami attend to Ceres wounded.
18-Praised with Miami for good shooting. Bombshell sunk. Ram reported above Williamston. Cast off from Miami at 6:15 PM. Fired upon enemy. At 10:30 PM came back downriver and refastened to Miami.
19-Rammed and sunk by CSS Albemarle in early morning.
20-List of armament at time of sinking: 1 100-pdr. Parrott rifle; 5 IX-inch Dahlgren smooth-bores; 1 12-pdr. smooth-bore.
31-Number listed as 53 missing after sinking.
APPENDIX B

ARTIFACT LIST AND PLATES

List of Artifacts from Southfield:

PL91 #01-Auxiliary tiller.
PL91 #13-Austrian Bayonet.
PL91 #14-Leather strap.
PL91 #15-Four minie balls.
PL91 #17-Four pieces of a shoe: Shoe #1 and Shoe #2.
PL91 #22-Top fragment of glass latern.
PL91 #24-Animal Bones: 1 distal end of metarsul of deer, sheep, or cow; 1 femur possibly from weasel; 1 scapula from woodchuck.
PL91 #25-Miscellaneous seeds, cones, walnuts, chestnuts, and peanuts.
PL91 #26-Piece of anthracite coal.
PL91 #28-Iron "stirrup".
PL91 #29-Fourteen fasteners.
PL91 #30-Fragment of copper sheathing.
PL91 #31-Copper sheathing tacks.
PL91 #32-Two sherds of an ironstone chamber pot.
PL91 #33-Glass cup.
PL91 #35-Z strap.
PL91 #41-Four sherds of stoneware.
PL91 #46-Ship's block.
PLATE 1. BRONZE FAIRLEAD PIECE.
PLATE 2. AUXILIARY TILLER AND AWL.
PLATE 3. AXE HEAD.
PLATE 4. Z-BRACKET, LOCK, MINIE BALL, AND BRASS FROG.
PLATE 5. SHIP'S BLOCK.
PLATE 6. GLASS TUMBLER AND IRONSTONE CHAMBERPOT SHERD.
PLATE 7. AUSTRIAN BAYONET.
PLATE 8. HOB-TOED SHOE WITH LEATHER FRAGMENTS.
PLATE 9. IRON FASTENERS.
PLATE 10. BOAT HOOK AND CANNONBALL.